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ABSTRACT

A digest about how higher education can use new telecommunications technologies, especially to reach students in off-campus settings, is presented. Six issues of volume 2 of the newsletter "TELESCAN" include articles on special topics, an update of legal and regulatory issues, and descriptions of national initiatives involving applications of technology-based instruction in higher education. Also included are abstracts and annotated bibliographies based on periodical articles, which are organized under the technology they address: audio, video, or computer technologies, or combined technologies. Specific categories include: radio, telephone, teleconferencing, broadcast television, cable television, videotext/teletext, satellites, videodisc, videotape, computers, and interactive video. Brief reviews of a variety of books, research reports, and occasional papers are also provided, along with ordering information. Finally, information is provided on conferences, workshops, seminars, projects, and other events. Specific contents include: a review of federal funding for telecommunications and education in 1982; two divergent views on the impact of cable technology on social institutions; and the potential of video teleconferencing for education and training. An index to volume 2 is included. (SW)

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TELESCAN

The Digest of the Center for Learning and Telecommunications

VOLUME 2, Issues 7-12, September/October 1982-July/August 1983.

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TELESCAN

SEPTEMBER/
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The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUE 7

Telecommunications And Higher Education in The '80s

by Marc Tucker, Project on Information Technology and Education

We are in for a dramatic rise in the use of telecommunications in higher education, and some major shifts in the application of these technologies. Telecommunications planning, operations, and policy development very likely will move from the periphery to the center of the field of vision of higher education managers. To see why this might be so, it is important to try to account for the role telecommunications has played in higher education to the present.

During the 30 years following the Second World War, higher education was characterized by extraordinary growth, fueled by increasing participation of 18- to 22-year-olds. The same period saw the widespread introduction of television, radio, the telephone, microwave systems, film, videocassettes, and satellite technology to higher education. These technologies were used to extend conventional classroom instruction to people off-campus who otherwise might not have been served. It was an era of "distance learning."

Yet the use of communications technology in this period was peripheral to the main enterprise. Apart from those few people involved in producing courses for off-campus students, and even fewer devotees using the technologies for on-campus classes, the campus was largely unaffected by these developments. Telecommunications issues rarely captured the attention of top administrators. Funds for new technologies were generally based on grant money, and distance learning activities were among the first to be cut when funds became tight. Restrictions on the growth of telecommunications in higher education were more often a function of education policy than of communications policy. In general, the future historian will more likely allocate a footnote than a chapter to telecommunications in higher education during this period.

The situation is changing, in some respects dramatically. The traditional college-age population is declining, proportionately and in absolute numbers. The demand for work-related education is rapidly increasing among employed people and is being met by the employers themselves or by nontraditional suppliers. So, for colleges and universities, it is a case of slack demand and excess supply. How does all this affect incentives for using telecommunications in education?

First, new suppliers of postsecondary education, not burdened by established ways of doing business, face a growing market for credit and non-credit adult education and can be expected to use technology whenever it appears to offer a more efficient means of achieving a given objective. Employers will apply the same reasoning in meeting the needs of their employees. Traditional institutions can be expected to block entry into their market whenever possible. However, they also are likely to compete with new suppliers, even at the cost of reducing funding to traditional programs, because nontraditional students now represent one of the few remaining prospects for increasing revenue.

The most powerful force for increasing the use of telecommunications in higher education may come from another quarter altogether—the computer. Demand for computing resources is exploding on many campuses, coming not only from administrators and researchers but from faculty and students. Professionals all over the country are expressing a fear that they will face occupational obsolescence if they do not learn how to use computers and make them a part of their professional equipment. This reasoning lies behind the insistence by many higher education institutions that undergraduates master the computer as a condition of graduation.

As the costs of computing decline, as the machinery become less mysterious and easier to use, as applications multiply, demand grows.

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CAPITOLSCAN

Washington-based, national initiatives involving uses of telecommunications in higher education.

PBS Adult Learning Service: First-Year Report

The 1981-82 academic year marked the transformation of postsecondary education by television from a curiosity to a national phenomenon, with more than 53,000 students enrolled in telecourses distributed by the Public Broadcasting Service (PBS). According to a report recently issued by the PBS Adult Learning Service on the completion of its first year of operation, 555 colleges and universities offered students the opportunity to earn credit toward a degree.

Working in partnership with 237 public television stations in 47 states, the colleges selected courses from among the 13 included in the fall 1981 and spring 1982 PBS Adult Learning Schedules. The colleges assigned local faculty, determined academic requirements, and decided on the amount of credit to be awarded for successful completion of each course. In total, there were more than 1,600 television course offerings by participating colleges this first year.

The types of colleges participating in the Adult Learning Service cut across the higher education landscape. Just over 56% are two-year colleges and about 44% are four-year institutions. Most of the colleges are under public control (83.7%) and they vary in student enrollment—32% small (under 2,500), 43% mid-range (2,500 to 10,000), 25% large (10,000 and over).

Public television participation encompasses 80% of all transmitting stations or 81% of all licensees. A total of 598 PBS-licensed television courses were broadcast by stations during the past year. A closer examination of station participation reveals that all types of stations are represented. Out of 129 participating licensees, 40% are community, 12% are local school board, 12% are state, and 36% are university.

A summary picture of the first year presents some interesting and encouraging figures for the use of television in postsecondary instruction. In fall 1981 the average number of students per course was 22. This figure rose to 33 in spring 1982. The number of colleges licensing PBS courses increased by 21 from fall to spring and the number of course offerings rose by 157.

Another 20 colleges are set to offer PBS television courses for the first time this fall and that number is expected to increase. Likewise, seven more stations will be joining the effort. There are significantly more requests from colleges to license television courses and a higher rate of return of signed licenses to PBS than last year. An optimistic estimate of the number of course offerings for fall is 1,000 (compared to 880 last spring).

Several factors will probably help boost student enrollment over last spring's figures, including increased lead time for colleges to plan for the fall term, promotion assistance from PBS in the form of materials and matching funds, and the experience of the past year. Another important marketing tool will be word of mouth endorsements by students, as more enroll in television courses and establish the reputation of these courses as interesting, challenging, and credible academic alternatives.

JCET Reorganizes; CPB Is Interim Secretariat

The Corporation for Public Broadcasting (CPB) has agreed to provide secretariat service for the Joint Council on Educational Telecommunications (JCET) for an interim period while the Council is in the process of reorganization. The Council is now located in the CPB Office of Education.

Throughout its history, JCET has served as an agent to focus the telecommunications needs of education. The Council was, in large part, responsible for the reservation by the Federal Communications Commission of educational television channels and has led efforts to preserve the Instructional Television Fixed Service for educational purposes and to ensure educational use of fixed orbital satellites.

Frank Norwood, former JCET executive director, said a number of issues remained to be resolved, including low-power television service, copyright and home video recording, and frequency division of the 12 GHZ band between terrestrial systems and direct broadcast satellites. Norwood will continue to serve as executive consultant to JCET.

The Council will continue to collect

Telecommunications and Higher Education in the '80s

(continued from p. 1)

Computer technology is not perceived in the same way that instructional technologies were. Faculty who would not dream of teaching a telecourse want access to a sophisticated terminal or microcomputer. Using this technology does not necessarily imply any change in the technology of teaching or in the established arrangements of the organization. Typically, computers are used for such functions as word processing, electronic mail, analyzing motets and poems, controlling theatre lights, writing music, searching literature, and so on. Thus, this technology is not a threat to the institution and its occupants; rather, it relates directly to the core functions of the institution as traditionally conceived, unlike the technologies that went before.

What does all this have to do with telecommunications? The new technologies permit highly adaptable distributed computing systems. This means communication links among microcomputers, mainframes, mass-memory devices, printers, typesetting machines, graphic display devices, and other equipment. It means a system that can tie in related requirements, such as telephone, facsimile service, and television, leading to a broadband communication system of great complexity, serving virtually every segment of the college community.

A year ago, colleges and universities ranked with non-banking financial institutions and the airlines as the users of telecommunications services, in terms of proportion of budget allocated for this purpose. If higher education institutions take advantage of the multitude of potential applications of the technology, they may soon be among the largest users of telecommunications services and products in the national economy.

In sum, telecommunications is likely to be a much more important part of the fabric of higher education in the future than it has been in the past. It will move from the fringes to become a part of the culture of the institution. The face it will present is likely to be less the familiar face of broadcasting and more the aspect of local networks, digital communication, common carrier, cable and satellite communications. As institutions of higher education become major users of these services, they will become major players in the telecommunications marketplace and the policy environment in which this highly regulated industry operates.

and analyze information, share it with the education community through its constituents, facilitate the use of telecommunications for educational purposes, and represent the interests of its members.

As interim secretariat, CPB will serve as a communication and message center for JCET, organizing and conducting four Council meetings during the year and alerting the Council's constituency to current telecommunications issues.

For more information contact Douglas Bodwell, CPB Office of Education, 1111 16th St. NW, Washington, DC 20036; 202/293-6160.

Nine Projects Provide Quality Education Through Telecommunications

This summer, the Fund for the Improvement of Postsecondary Education (FIPSE) made nine new grants for model projects designed to advance the use of telecommunications for education purposes. The Fund is a program within the U.S. Department of Education.

Evaluation studies have shown that faculty are unsure how to tailor their roles to complement telecourse components that encourage students to learn independently. Thus, three of the projects focus on better ways to integrate faculty participation into the telecommunications learning setting:

- The New Jersey Community College Telecommunications Consortium will offer workshops at 15 colleges to enable faculty to examine the pedagogy on which telecourses are based and to evaluate existing courses.
- The WNET/Channel 13 project will set up teacher workshops to accompany a film series about writing and encourage more effective strategies for integrating the films into composition instruction.
- The National University Consortium for Telecommunications in Teaching will bring together faculty with diverse disciplinary expertise to demonstrate a collaborative model for developing telecourse materials for learners.

Appropriately, two of these projects also videotape their own faculty activities, to provide a better understanding of how faculty themselves are learning.

Another group of grants takes advantage of the wiring for cable television that is rapidly occurring across the country. The pervasiveness of cable access has established an hospitable environment for cooperation among education providers, cable companies, and education consumers, directed toward expanded curriculum opportunities and attention to local needs:

- The Detroit Educational Television Foundation will link cable, public television, and colleges and universities to deliver courses to homes 24 hours a day. Expanded course offerings will include upper-level courses and enable more students to complete degrees.
- The Metropolitan Educational and Cultural Communications Association (based at M.I.T.) will make it easier for Boston-area college adult education centers and libraries to obtain, produce, and distribute programming.
- The University of Minnesota, Morris, will link colleges, libraries, telecommunications facilities, and community education groups, who will design and deliver courses and services needed by their rural learners.
- The University of New Mexico will develop a statewide telecommunications network aimed at overcoming geographic limitations and meeting rural needs.

Recognizing that thousands of students across the nation enroll in telecourses, a grant made to the Council on Postsecondary Accreditation and the State Higher Education Executive Officers Association will develop standards and procedures concerned with accreditation and jurisdiction questions. (See article on p. 4 for more details.)

One of the nine grants supports production of telecommunications materials primarily. This is a grant made to the University of Minnesota Law School to improve the education of students in trial skills by videotaping and critiquing their "performances" weekly.

In addition to the nine new grants made this year, the Fund is supporting seven ongoing projects in telecommunications.

For the 1982 Comprehensive Program, the Fund expects once again to receive a large number of applications in this area. The deadline for proposals will be December 7. The Fund also runs the Mina Shaughnessy Scholars Program which gives practitioners released time to analyze practice with a view toward synthesizing information about improvements. To date no scholar awards have been made in the area of telecommunications education. An early November deadline is scheduled for this competition.

Also in keeping with Education Secretary Terrel Bell's initiative on better uses of instructional technology, FIPSE is exploring the possibility of a small, focused competition for computer and telecommunications projects in 1983. Information about these grant programs is available by calling 202/245-8091.

Teacher Development Programming Via Cable

The Appalachian Community Services Network (ACSN) has initiated its first special marketing effort toward the professional development needs of the nation's K-12 teachers. School districts throughout the country with direct access to ACSN through their local cable companies have been invited to join ACSN's new membership program. Early response has been favorable.

To facilitate the in-service needs of public schools, ACSN has scheduled in-service training video programs between 3 and 4 p.m. (ET), weekdays during the academic year. Types of programming include curricular development ideas, motivational programs, discipline-related updates, and other topics requested by public schools. Through their membership, school districts and their teachers have access to the programming as it is delivered by cable and receive short-term licensing rights for taping and replay of programs, updated materials describing each program and series, and information on other ACSN programs that can be used by schools for in-service and in-class purposes.

The staff development program emphasizes continuous learning, permitting districts to spread in-service budgets and momentum over the entire school year. With the ongoing ACSN programming, teachers will have the option of choosing topics in which they have particular interest and will have the flexibility to meet state in-service requirements at their convenience.

Members of the staff development program will be surveyed throughout the year to insure that future scheduling reflects the needs of the nation's public schools. For more information, write or call Frank Peto, ACSN, 1200 New Hampshire Ave. NW, Washington, DC 20036; 202/331-8100.

Association Updates

Reports of several higher education associations updating the activities of their committees on telecommunications. Initial descriptions of these committees were provided in TELESCAN, Volume 1, Issue 1 (September/October 1981).

American Association of Community and Junior Colleges. AACJC's Instructional Telecommunications Consortium (ITC) now has a regular membership of 26—single institutions, multi-campus districts, and statewide consortia of two-year colleges that together represent some 200 separate institutions. In addition, ITC has three associate members, all commercial publishers of video-based instructional materials.

Recently, the Consortium members decided to break the total membership down into six regional subgroups, with regional meetings in addition to the three general meetings held each year. This arrangement will encourage continuing contacts among members and allow greater attention to regional issues.

As membership has expanded, ITC goals have broadened. When it began as the Task force on Uses of the Mass Media in 1977, its interests tended to reflect those of the core of its original membership—two-year colleges actively involved in producing and distributing telecourses. Now, however, the focus has shifted to the effective utilization of telecourses by institutions that adopt them. Accordingly, much consideration is being given to ways faculties can be encouraged to adapt telecourses to local use, and ways they can support them effectively and imaginatively. The ITC has requested a grant from the Corporation for Public Broadcasting for the preparation of a guide to telecourses for distribution to administrators and faculty.

Information sharing and dissemination, as well as influencing policies on instructional telecommunications, still remain major goals of the ITC. In addition, curriculum planning and telecourse design activities that involve cooperation among ITC members and nonmembers are high-priority items. Four of the producer-members of the ITC submitted proposals for joint telecourses to the CPB/Annenberg School of Communications Project this year. Two were among the proposals funded: an introductory course in the computer and a first-semester course in English composition.

For information on the ITC and its activities, write or call Jim Zigerell, ITC staff director, AACJC, One Dupont Circle, Suite 410, Washington, DC 20036; 202/293-7050.

National University Continuing Education Association. Members of NUCEA's Division of Educational Telecommunications Utilization are currently developing a book focusing on telecommunications and education, under the leadership of Ronald Turner of the University of Missouri-St. Louis (St. Louis, MO 63121; 314/553-5911) and in conjunction with Wadsworth Publishing Company.

For information contact Robert V. Dean, division chairperson, at the Center for Media-Based Instruction, Georgia Institute of Technology, Atlanta, GA 30319; 404/894-3364.

American Association of State Colleges and Universities. AASCU's Committee on Communications Technology regularly sponsors presentations at the association's annual meeting. The 1981 meeting featured a demonstration of computer graphics. For the 1982 meeting, the committee is planning a presentation on interactive video systems followed by a discussion of the effects of technology on the interpersonal aspects of teaching and learning.

Committee members have provided technical assistance, support, and encouragement for the development of projects in the field by AASCU and other organizations. In the coming year the committee will be concentrating its efforts on the formulation of strategies for promoting the use of technology on the campuses of state colleges and universities.

For information contact Dee Mallarky, AASCU, One Dupont Circle, Suite 700, Washington, DC 20036; 202/293-7070.

State Higher Education Executive Officers and Council on Postsecondary Accreditation. SHEEO and COPA have received a grant from the Fund for the Improvement of Postsecondary Education to develop standards for the accreditation and state licensure of postsecondary education provided through telecommunications. The purpose of the project is to develop a rational framework for assessing educational programs delivered through electronic media, with particular emphasis on eliminating unnecessary interstate barriers while preserving the critical elements of consumer protection and quality assurance.

The 18-month project, funded for more than $200,000, will seek to develop the capacity within the regional and specialized accrediting organizations and state authorizing agencies to deal effectively and equitably with this new form of instructional delivery. Of particular importance will be the reconciliation of potentially conflicting interests such as the reserved power of the states to regulate the delivery of educational services within their boundaries with the federal doctrine of promotion of interstate commerce.

The project will examine such complex issues as those arising out of federal preemption of broadcasting and deregulation of alternative electronic media such as cable, and the use of satellites and other dissemination technologies that inherently ignore jurisdictional lines, all in the context of the need to provide reasonable and consistent regulation.

The work of the project will be carried out by task forces on accreditation, state authorization and licensure, legal issues and technology. Each task force will consist of experts drawn from the higher education, telecommunications, and other appropriate communities.

Co-directing the effort are Gordon Davies, director of the Virginia State Council of Higher Education and chairman of the SHEEO Federal Relations Committee, and Richard Millard, president of COPA. They will be aided by an eight-person steering committee representing the regional and specialized accrediting bodies and state boards of higher education.

A major thrust of the project will be to involve all the relevant constituencies in the deliberative process out of which will emerge the reports and recommendations. Discussions have already been initiated with the American Association for Higher Education for an open hearing on the issues raised by the project at the upcoming AAHE National Conference, March 27–30, in Washington, D.C.

Bruce Chaloux, coordinator of institutional approval and academic special projects for the Virginia State Council of Higher Education, has taken a partial leave of absence from that post to serve as project coordinator. For further information, contact him at One Dupont Circle, Suite 410, Washington, DC 20036; 202/659-1406.

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. . . brings you more services—see page 14

PRINTSCAN

Abstracts and bibliographies of articles appearing in periodicals from May 15 through July 15.

Innovative Concepts

Gerardi, Robert; Gary Benedict; and Michael A. Burke. **"Educational Technology: Will It Spread?"** *Journal of Educational Technology Systems,* Vol. 10 (1982), 357-61. A discussion of the future of educational technology resulting from accelerated developments in the field of computers.

Pollan, Michael. **"The Electric Library."** *Channels,* June/July 1982, pp. 30-31. A look at the dilemma facing public libraries in the information age.

Rothbart, Gary. **"Technical Financing."** *CableVision,* June 21 1982, p. 41. A report on a telecommunications financing seminar urging investment in new technologies.

"Shaping the Future of Telecommunications." *Broadcasting,* June 7, 1982, p. 56. An examination of the role of the U.S. in the resolution of broadcasting issues at several upcoming International Telecommunications Union conferences.

"The AT&T Point of View on New Information Services." *Broadcasting,* June 28, 1982, pp. 59-60. A description of AT&T's plans for providing information management services.

Legal/Regulatory Issues

"Does Federal Copyright Law Preempt State Trade Secret Protection for Computer Software?" by Michael Scott, *The Scott Report,* June 1982, pp. 6-10.

The Copyright Act of 1976 intentionally preempted state common law copyright protection for all copyrighted works. However, since the legislation is not totally clear, it is not known whether the preemption applies to other forms of state protection, such as trade secret laws. Trade secret laws have been the favored form of protection for computer software. A 1980 congressional amendment to the Copyright Act laid to rest any question as to whether computer programs come within the boundaries of copyrightable works. The amendment specifically includes computer programs within section 102.

The only remaining issue is whether trade secret protection is a legal right under the act. The legislative history of the Copyright Act shows that Congress intended to preempt all state rights within the general scope of copyright. So far, court cases on this issue have been inconclusive, with decisions supporting both sides. The general trend, however, seems to indicate that trade secret protection will be found not to be preempted by federal copyright law. The U.S. Supreme Court will probably settle the question.

"Support of Educational Technology by the U.S. Department of Education: 1971-1980," by Andrew A. Zucker, *Journal of Educational Technology Systems,* Vol. 10 (1981-82), 303-20.

Approximately $1 billion has been spent during the past decade by the Department of Education and its predecessor on educational technology research, development, demonstrations, and support for local purchase of equipment and facilities. Although this figure is only slightly more than 1% of the Department's budget (averaging less than $2 per pupil per year) and little has been written about it, there are some significant results. This article reports a breakdown and analysis of the spending pattern.

About half of the money can be attributed to projects supported by discretionary funding. These have included: ESAA (Emergency School Aid Act) television programming (e.g., "Villa Alegre" and "Vegetable Soup"); "Sesame Street" and "The Electric Company"; ATS-6 satellite demonstrations; the University of Mid-America; captioned films and media services grants; closed-captioning for television; FIPSE (Fund for the Improvement of Postsecondary Education) grants; the Appalachian Community Service Network and the Educational Telecommunications for Alaska Project; the National Instructional Materials Information System, the National Information Center for Special Education Materials for the handicapped, the Optacon device, the Kurzweil reader for the blind; the Telecommunications Demonstration Program; and technology to improve basic skills.

Many other smaller projects, such as the Minority Institutions Science Improvement Program in two- and four-year colleges, have also been funded.

Formula grant funding, on the other hand, has supported the Elementary and Secondary Education Act for disadvantaged students. Much of this funding has focused on broadcast activities; other areas include new or underutilized technologies, electronic mail experiments, and new services and products (e.g., the ERIC system and the Kurzweil reader).

Future funding should (1) consider basic knowledge needs, (2) follow up earlier successes, (3) focus on non-broadcast technologies, (4) develop ties with the private sector, and (5) emphasize sound projects.

"Changes Sought in LPTV Rules." *Broadcasting,* June 28, 1982, pp. 56-57. A review of various petitions to the FCC for modification of its low-power television ruling.

"Dawson's View of Tomorrow's Media Marketplace." *Broadcasting,* June 14, 1982, pp. 63-64. A review of remarks by FCC Commissioner Mimi Dawson on the regulatory outlook for new technologies.

"Endorsing FCC Stance." *CableVision,* June 28, 1982, p. 81. A discussion of a report supporting the FCC's position on planning and implementation of direct broadcast satellites (DBS).

Evanow, Peter. **"VCRs—Debatable Issue."** *CableVision,* June 28, 1982, p. 75. A debate between representatives of opposing interests on the home video recording court ruling.

"FCC Opens the Skies to DBS." *Broadcasting,* June 28, 1982, pp. 27-28. A report on the FCC's authorization of interim rules to allow licensing and operation of DBS.

"Federal Funding Called Newer-Term Hope for Public Radio-Television." *Broadcasting,* June 28, 1982, p. 69. A review of the findings submitted to Congress by the Temporary Commission on Alternative Financing for Public Telecommunications.

"Goldwater Presents Revised Version of Cable Bill." *Broadcasting,* July 12, 1982, pp. 48-49. An overview of revised bill to regulate the cable industry.

"Hearing No Evil on Copyright Compromise." *Broadcasting,* June 7, 1982, pp. 35-37. A discussion of comments at a congressional hearing on the amendment of cable copyright laws.

Leddy, Craig, and Peter Evanow. **"Legislative Scorecard."** *CableVision,* May 10, 1982, pp. 259-81. An overview of cable regulations decided or pending before state legislatures.

Noam, Eli. **"Federal Regulation of Cable Television and the Role of Local Governments."** *Access,* April 19, 1982, p. 3. A commentary on the conflict between federal deregulation and states' rights arising from the cable bill introduced by Sen. Barry Goldwater.

"The Packwood Amendment: Going to the Heart of the Problem." *Broadcasting,* May 31, 1982, pp. 54-56. An analysis of remarks by Sen. Robert Packwood at the National Association of Broadcasters (NAB) convention calling for a constitutional amendment to protect electronic media.

"Where Things Stand." *Broadcasting,* July 12, 1982, pp. 24-25, 71-74. A review of regulatory issues pending that affect electronic communications.

Broadcast Television

"PBS Finds Itself in a Rapidly Changing Game," by B. B. Yovovich, *Advertising Age,* May 31, 1982, pp. M2-3.

Funding cuts and competition from the cable industry are forcing the Public Broadcasting Service to experiment with advertising (commercials), to explore alternative sources of funding, and to reexamine its budget priorities. In addition, some of the more prominent PBS personalities are being lured to the commercial networks.

At the same time, viewership is up. More importantly, PBS viewers tend to be well-educated, in upper-middle income brackets, and employed in professional or managerial occupations—characteristics that make public television audiences attractive to advertisers.

Aside from commercials, one plan being considered is a PBS-operated pay cable service, called PBS Cable. PBS' established expertise in fund-raising and membership recruitment and its close ties with major cultural institutions are advantages, but the limited number of PBS viewers with cable hookups is a drawback.

Other possible sources of revenue being discussed include excise taxes levied on television sets sold, taxes imposed on commercial broadcasters, a national telethon, new tax laws to provide tax credits, a tax checkoff on federal and state income tax returns, and rental of unused PBS satellite capacity and TV studios for commercial production or video teleconferencing.

"Alternative Funding Plan for Public Broadcasting Criticized by NTIA." *Broadcasting,* July 12, 1982, p. 66. An examination of the National Telecommunications and Information Administration's opposition to a report submitted to Congress on the funding of public broadcasting.

"Busy Time for LPTV'ers." *Broadcasting,* July 12, 1982, p. 56. A report on three professional associations now serving the interests of LPTV, and their upcoming trade shows.

"California and New York Report Misuse of Telecourses." *Labor Education Advisory Services,* June 1982, p. 1. A discussion of faculty complaints at two institutions involved in using telecourses.

Chitester, Robert J. **"Drop the Federal Subsidies and Public TV Will Broaden Its Base."** *Public Communication Review,* Spring 1982, pp. 20-21. A reprint of an article calling for unsubsidized public television.

Evanow, Peter. **"Public Channels."** *CableVision,* July 12, 1982, p. 19. A review of comments by PBS President Larry Grossman on new technologies that will help public television expand.

Gladstone, Brooke. **"Rural West May Get PTV, Finally."** *Current,* June 11, 1982, pp. 1, 4. A report on a proposal to bring public television to unserved rural areas in the West.

Green, Alan. **"Low-Power Television: Set To Go."** *Videography,* May 1982, pp. 94-96. An update on developments in LPTV service, which has been approved by the FCC.

Klein, Ellen Milhan. **"Television Shrinks Into the Future."** *Technology Illustrated,* June/July 1982, pp. 85-89. An examination of development of pocket-sized televisions.

"Public Broadcasters Have Money on Their Minds." *Broadcasting,* July 5, 1982, pp. 65-67. A report on the status of public television from the PBS annual meeting.

Selleck, Thomas. **"ITV at MIU—Video Plus Meditation."** *E-ITV,* July 1982, pp. 36-38. A profile of the video production facilities at Maharishi International University in Fairfield, Iowa.

Sobel, Robert. **"PTV Stations Swinging Into Commercial TV Syndication."** *Television/Radio Age,* May 17, 1982, pp. 48-49, 73-74. A discussion of public television stations producing programs for commercial syndication to offset federal budget cuts.

Cable Television

"When Renewal Means Rebuild," by Gary Rothbart, *CableVision Plus,* June 28, 1982, pp. 20-22.

Cable operators in smaller markets are facing potential competition when refranchising time comes near. As a result, many are spending significant amounts of money to upgrade their current systems, including hiring out-of-area consultants. The Staunton Video Corp., which has served the Shenandoah Valley in midwestern Virginia since 1968, is an example of a company that has done just that.

Although StauntonVideo was, at the end, the only bidder in the refranchising competition, the company spent more than $100,000 for consultants. It proposed to upgrade to a 400 MHz, 52-channel system with five access channels and a 10-mile institutional loop, as well as fully addressability within five years and a business data network within 15.

Local politicians are aware of the competitiveness of the industry and take advantage of it in the refranchising process. Similarly, consultants and lawyers specializing in cable franchising, counseling with both city officials and cable executives, benefit from the competition.

Key questions to be asked by a cable company in such a situation include: Is the local political climate favorable for 15 more years of service? How much debt is left and will it be difficult to refinance for a rebuild? What is the condition of the plant and what has to be done to enhance the cash flow?

Suggestions for improving customer satisfaction include: Research the track record of competitors. Delegate the responsibility for refranchising to someone on staff at the local level. Identify the city decisionmaker. Determine customer satisfaction through market studies. Prepare an advertising campaign. Take care of possible violations of the original franchise agreement.

Outside financing for rebuilding is often available through joint ventures with local broadcasters or newspapers, banks, insurance companies, and pension funds.

Baker, Jeri. **"Genteel Giant in a Gambler's Den."** *CableVision,* June 14, 1982, pp. 14-22. A look at Knight-Ridder Newspapers' venture into cable and videotext.

Ball, Adrian. **"Britain Enters Cable Era With Technical Advantage."** *CableAge,* June 14, 1982, pp. 6-12. An examination of the cable development program underway in Britain.

Bednarczyk, Susan. **"Programming for People Like You and Me."** *Community Television Review,* Spring 1982, p. 11. A view of an access program in East Lansing, Michigan, to provide information about, and a forum of discussion for, the special problems of the handicapped.

Behrens, Steve. **"Partner Talks May Alter Plans for PBS/Cable."** *Current,* June 11, 1982, pp. 1, 4. A progress report on the PBS Cable plan and guidelines for joint ventures in the new technologies.

"**Cable Franchising Update.**" *Broadcasting*, July 12, 1982, pp. 37-47. A profile of cable franchising nationwide.

Christopher, Maurine. "**Denver Drama Demonstrates CATV Battles.**" *Advertising Age*, June 7, 1982, p. 46. A discussion of the cable franchising dispute in Denver, Colorado.

Dickstein, George. "**Supporting Community Aims Pays Off for Operators.**" *CableAge*, May 31, 1982, pp. 27-31. A view of cable operators' involvement in community affairs.

"**'Europe's First Satellite Link Promotes 'Eurocable' Idea.**" *CableAge*, June 14, 1982, pp. 13-16. A profile of international cable television delivered by satellite from Britain to other European countries.

Evanow, Peter, and Jim Craig. "**Family-Style Cable.**" *CableVision*, July 12, 1982, pp. 31-38. A profile of the Community Antenna Television Association, a grassroots organization representing small cable operators.

Greenberg, Pam. "**Marketing and Programming: Research, Respond, Promote.**" *TVC*, June 1, 1982, pp. 34-40. A report on a session at the National Cable Television Association (NCTA) convention advising system operators on promotion, marketing, and selling strategies.

Grillo, Jean Bergantini. "**Stalking Subs.**" *CableVision*, May 10, 1982, pp. 97-98. A report on several studies undertaken to develop a profile of the "typical" cable viewer.

Hill, Arthur. "**Bell Against the World: 'The World is Losing.'**" *TVC*, June 1, 1982, pp. 62-74. A discussion of cable operators' concerns about the future of the cable industry in reaction to the AT&T settlement.

Hill, Arthur. "**Cable and Videotext: A Leap of Faith?**" *TVC*, July 1, 1982, pp. 54-64. An examination of the cable industry's advance into the field of videotext services.

Holsopple, Barbara. "**Pittsburgh Activates Two-Way Cable.**" *CableVision*, May 10, 1982, p. 172. A report on the activation of the QUBE two-way cable system in Pittsburgh, Pennsylvania.

Marks, Jill. "**How System Managers See LO.**" *TVC*, June 15, 1982, pp. 30-36. A view of cable system managers' commitment to locally originated programming.

Marks, Jill. "**The Long Road to Two-Way.**" *TVC*, July 1, 1982, pp. 44-45, 50-52. A report on cable operators' plans to add interactive services to existing systems which could increase profits.

McCausland, Rob. "**Boston Community Access and Programming Foundation: What Lies Ahead?**" *Community Television Review*, Spring 1982, pp. 20-22. An update on the development of an access corporation required by the Boston cable franchise.

Miller, Ron, "**San Jose Cable Ahead of Pack.**" *CableVision*, May 10, 1982, p. 171. A profile of the San Jose cable system.

Moozakis, Chuck, and Ilene Smith. "**Is Local Origination A Waste of Time?**" *TVC*, June 15, 1982, pp. 52-64. A look at 10 cable systems nominated for awards for their locally originated programming efforts.

O'Donnell, Thomas, and Jay Gissen. "**A Vaster Wasteland.**" *Forbes*, May 24, 1982, pp. 109-16. A market analysis of the various cable television programming services.

Ross, David; Maribeth Thelen; and Kate Hampford. "**50 of the Top Companies in Cable.**" *CableVision*, May 10, 1982, pp. 203-34. A guide to the 50 largest cable companies.

Schewe, Regina R. "**Why Add Enhanced Services?**" *TVC*, July 1, 1982, pp. 66-69. A discussion of how cable operators can position themselves now to make adding two-way capabilities cost-effective in the future.

Schwartz, Mike. "**Cable Snafus Frustrate Franchise Contenders.**" *Advertising Age*, May 31, 1982, pp. M22-23. A review of cable legislation process in Philadelphia, Pennsylvania, that has delayed cable services.

Sell, George. "**Gary Tjaden.**" *CableVision Plus*, June 28, 1982, pp. 4-11. An interview with Cox Cable's vice president for engineering on the changing role of the engineer as two-way interactive services are introduced in the next decade of cable.

Simama, Jabari. "**Black Participation in Telecommunications: Guideline for Right Now!**" *Community Television Review*, Spring 1982, pp. 16-19. A call for increased participation by blacks in the cable industry.

Smith, Marsha, and Michael Lewis. "**Minority Programming: Breaking the Image.**" *Community Television Review*, Spring 1982, pp. 4-5. A look at a minority community access program.

"**The First Step: LO Equipment Manufacturers & Suppliers.**" *TVC*, June 15, 1982, pp. 40-49. A list of manufacturers and suppliers of production equipment to local origination and community programmers.

Teletext/Videotext

"**Videotext: The Past as Prologue,**" by John Carey, *Journal of Communication*, Vol. 32, (Spring 1982), 80-87.

Videotext—defined here as two-way electronic information, transaction, and messaging services—is examined in relationship to the early histories of the newspaper and the telephone. Focus is on purchasing patterns and styles of usage. The notion that videotext will follow a growth pattern like that of radio or television (i.e., becoming a mass medium) is challenged.

Both newspapers and telephones originally served only a small, select group of users, and there were significant economic and social barriers to mass consumption. Later, appeal of the newspaper was tied to the mode of delivery, which made it convenient and habit-forming. Telephone usage was low at first because of price barriers and discomfort using the technology, but later became habitual by households calling a few regular numbers or general-information "dial it" numbers.

The economic characteristics and intended applications of videotext suggest that it will develop along a path quite different from that of television or radio, encountering some of the same problems faced by early newspapers and the telephone. Videotext is not automatically habit-forming; it is an expensive medium that requires typing skills, an ability to read, and some understanding of computer protocols. It also relies on the home television set to display information, although there is difficulty in dealing with dense textual displays on an ordinary TV. In addition, the design of videotext systems is intended to meet a demand for specific information searches of large databases—but existing patterns of information consumption by the general public emphasize habitual behavior. It is suggested that videotext will face a very slow growth as an information utility in the decades ahead.

Arlen, Gary. "**Interactive Homes.**" *CableVision*, May 10, 1982, p. 371. A report on several pilot projects underway to test the market for videotext services.

Arlen, Gary. "**Teletext Coming, But Route Unclear.**" *Broadcast Engineering*, June 1982, pp. 150-51. A review of sessions at the NAB meeting that dealt with the prospects for providing teletext services.

Cowart, Bob. "**Ready or Not, Data Is Here to Stay.**" *TVC*, June 1, 1982, pp. 76-

80. A report on sessions at the NCTA convention devoted to the relationship between cable and other data transmission systems.

Hack, Sylvia. **"Teletext, Videotext Dawn Seeks Market Sunrise."** *CableAge,* June 28, 1982, pp. 6-11. A discussion of the results of a number of market tests that will determine who will be consumers of teletext/videotext services.

"Neustadt Suggests Loose Government Rein on Electronic Publishing." *Broadcasting,* June 28, 1982, p. 61. A review of a new book that serves as a guide to teletext/videotext services and focuses on issues that will frame regulatory policy.

Pesin, Ella. **"Electronic Newspapers Receiving Mixed Response."** *CableAge,* May 17, 1982, pp. 6-12. A report on market research conducted by newspapers and cable operators to determine teletext/videotext viewership levels and to develop demographic profiles that will assist them in selling the service to consumers and advertisers.

"Predicting Profits for Videotext." *Broadcasting,* July 12, 1982, pp. 58-60. A review of a report that predicts videotext's revenue potential.

Stoller, David. **"Futuristic Text."** *CableVision,* June 28, 1982, pp. 65-66. An announcement of the Videotext '82 conference in New York, and a review of a report on electronic services to be delivered by cable in the future.

"The Why's and Wherefore's of Text Transmission." *Broadcasting,* July 5, 1982, pp. 32-35. An overview of the agenda at the Videotext '82 conference.

Thompson, Tony. **"Agencies Skip Telidon Conference."** *Advertising Age,* June 7, 1982, p. 36. An examination of the successes and failures of Canada's videotext systems.

"Teletext and Videotext." *Broadcasting,* June 28, 1982, pp. 37-49. An analysis of the market potential for teletext/videotext services.

"Transactional Services Will Support Videotext, Experts Say." *Video User,* May 1982, p. 7. An analysis of the commercial viability of teletext and videotext.

"Videotext Enrollment." *CableVision,* June 14, 1982, p. 68. An announcement of the installation of a videotext system at the University of Florida to transmit an electronic newspaper.

Computers

"A Computer-Aided Learning Project in Saudi Arabia," by Jesse J. Defore and Thomas J. Greene, *Engineering Education,* May 1982, pp. 794-97.

An educational technology project has succeeded among an unlikely audience at the University of Petroleum and Minerals in Dhahran, Saudi Arabia. The project, which began during the 1979-80 academic year, involves 1,000 beginning students using computer-based instructional materials, in English, in a required introductory course, Computations in Science and Engineering. English is a second language for the students, who come from small towns in Saudi Arabia and many of whom had never before used a typewriter or computer.

Use of the computer allows students to proceed at their own pace, provides a way for them to drill and practice new skills, and maintains the integrity of existing course design.

SOURCESCAN

Books, research reports, and occasional papers, and information on how to obtain the publications

A Telecourse Sourcebook for the 80's, edited by Louise Hewitt. Coast Community Colleges [10231 Slater Ave., Fountain Valley, CA 92708]. 1982. 122 pp. $10.

A survey of the origins and present status of television courses. This booklet reviews the extensive literature on telecourse design, use, and effectiveness. Also includes bibliographies.

Communications Tomorrow: The Coming of the Information Society, edited by Edward Cornish. World Future Society [4916 St. Elmo Ave., Bethesda, MD 20814]. 1982. 160 pp. $6.95.

A collection of articles on cable television, videotape recorders, and other technologies that may offer solutions to the problems in today's society. This book offers a vision of the future based on the trends developing in libraries, newspapers, microcomputers, language, and other fields affected by new information technology.

Open Learning in North America: A Compendium. British Open University Foundation, Inc. [110 East 59th St., New York, NY 10022; 212/935-8965]. 1982. 14 pp. Free.

A representative sample of open or distance education programs in North America that use materials from the British Open University. This paper lists some 70 programs that include individualized learning, televised classes, telecourses, and correspondence courses. Each description provides information on admissions, enrollments, course of study, methods and materials, and contact persons.

Proceedings of Applying New Technologies in Higher Education. Issues in Higher Education. [Kansas State University, 1623 Anderson Ave., Manhattan, KS 66502]. 1982. 430 pp. $25, plus $1.50 postage.

A collection of papers presented at a March 1982 meeting in Atlanta, Georgia. The presentations cover a variety of applications of video and computer technology in colleges and universities across the country.

Teaching Writing with the Computer as Helper, by J. Terence Kelly and Kamala Anadam. AACJC Pocket Reader: 2. American Association of Community and Junior Colleges [One Dupont Circle, Suite 410, Washington, DC 20036]. 1982. 56 pp. $5.

A discussion of the computerized feedback system developed at Miami-Dade Community College that supports the "Writing for a Reason" telecourse series. This booklet provides background information on the use of computers in education, as well as the computer system at Miami-Dade and its varied uses.

Teleconferencing and Electronic Communications: Applications, Technologies, and Human Factors, compiled by Lorne A. Parker and Christine H. Olgren. Available from Center for Interactive Programs [975 Observatory Drive, Madison, WI 53706; 608/262-4342]. 1982. 148 pp. $25.

A comprehensive view of the latest developments and trends in electronic systems used for group communications. This book describes applications, tech-

Hardware includes a one-megabyte Hewlett Packard (HP) 3000 Series III minicomputer, 40 student terminals (#2621A), and three instructor terminals (#2645A). A series of stand-alone microcomputers could be an alternative. An HP-University of Wisconsin software package is used in conjunction with the Teacher Improvement Programming System (TIPS) package.

Four two-man teams, each consisting of a faculty member and a graduate assistant, wrote the computer-based lessons, although they had little or no prior experience with computers. The software allowed them to create instructional dialogs with which the students could interact. Each dialog program can be completed by better students in 30-40 minutes. Both the dialogs and accompanying multiple-choice quizzes are keyed to the existing textbook.

Results of the project have shown success in terms of student learning, student and faculty acceptance, and equipment utilization.

"Computerized Conferencing as an Educational Tool," by Elaine B. Kerr and Mark Heimerdinger, *EDUCOM Bulletin*, Summer 1982, pp. 27-29.

Computerized conferencing—sometimes called electronic conferencing—offers wide capabilities that differentiate it from other forms of computer-based communication such as electronic mail. In institutional and professional organization settings, it can provide creative solutions to communications barriers that often hinder productivity.

This type of conferencing can replace or supplement face-to-face meetings and allow for sharing of information, especially in draft stage, with multiple authors.

Unlike electronic mail systems, computerized conferencing systems use the computer to structure, store, and process communications—not merely to promote a direct exchange of messages. Text items are composed on a terminal linked to a central computer via direct telephone lines or a network such as Telenet, Tymnet, or Uninet. Geographically separated groups can communicate and share a permanent, editable transcript of the proceedings. Most systems include the following components: messages, conferences, notebooks or files, bulletins or journals, and "text editor," which allows for modifications. Advanced conferencing systems may also include mechanisms for indexing, voting, searching, retrieving, etc.

Among the possible applications of such a system for academe are: student and faculty participation in special seminars; online, flexible office hours; coordination between faculty and teaching assistants; committee work, course development; and communication with satellite campuses.

Current field trials with the Electronic Information Exchange System at the New Jersey Institute of Technology have demonstrated potential for this technology in areas of: continuing education computer literacy, teaching the severely disabled, advanced management seminars for executives, management education, an electronic English course, and undergraduate courses in computer science.

Computerized conferencing may also be useful for dealing with the problems of declining enrollments and older students by offering courses at a distance.

"Performance-based Individualized Educational Applications of the Computer in Continuing Medical Education," by Ruth Colvin Clark and Phil R. Manning, *Journal of Educational Technology Systems*, Vol. 10 (1981-82), 377-87.

Computers appear to offer great potential for adult and continuing professional education, even more than for undergraduate use. Computer-assisted instruction in the medical field is a case in point. This article reviews such an application with emphasis on providing practicing physicians with memory support, profiles of practice for needs assessment, and diagnostic/management algorithms.

The strategy of providing physicians with ongoing practice-related feedback is described. Specifically, computers can provide access to literature and to aggregated patient data through the MEDLINE database, and can produce patient-care reminders. In the clinical setting, computer systems such as MEDIPHOR (which warns of potential drug interactions), INTERNIST (which assumes the role of a consultation system), and PROMIS (which provides a highly structured problem-oriented medical recording system), provide even more specific guidance.

At the University of Southern California Medical Center a research project is underway that may provide practice-based feedback on an ongoing basis to practitioners. It involves a review of a practitioner's prescriptions correlated with specific patient data.

nologies, and human factors involved in a variety of teleconferencing and computer-based systems. It also discusses new research studies on the effectiveness of teleconferencing, as well as implementation planning, user training, satellite networks, room design, travel substitution, and computer conferencing.

The 1982 Satellite Directory. Phillips Publishing Inc. [7315 Wisconsin Avenue, Bethesda, MD 20814; 301/986-0666]. 1982. 550 pp. $95.

A guide to the satellite industry—carriers, hardware, technical services, programming services, consultants, and associations. This book provides names, addresses, and phone numbers of a variety of companies involved in satellite communications, updating information listed in previous editions.

Computer-Based National Information Systems: Technology and Public Policy Issues, by Office of Technology Assessment. Available from the Government Printing Office, [Washington, DC 20402]. 1981. $6.50.

One of a set of four studies which provides an introduction to policy issues surrounding computer-based national information systems. This report includes a state-of-the-art survey of computer and related industries and sets the stage for three subsequent studies on electronic mail, electronic funds transfer, and criminal history records.

Educational Packet Series. National Federation of Local Cable Programmers [906 Pennsylvania Ave. SE, Washington, DC 20003; 202/544-7272]. 1982. $72 for set.

Five packets of materials covering various areas of cable community access development. These publications deal with guidelines and policies for community programming; examples of educational programs using cable; a sample contract between nonprofit access centers and cable companies; and how the arts use cable. Packets may be purchased individually.

Personal Computer Buyer's Guide. Data-Master [443 S. Barrington, Brentwood, CA 90049; 213/472-8127]. 1982. $18.95.

A guide to selecting a personal computer system for business. This book contains descriptions, illustrations, and comparisons of the most popular computers, with a special section that compares print styles, features, speed, and durability of brand-name printers. Also features a complete survey of dealer location, prices, software, service and warranties, and purchasing arrangements.

In undergraduate applications, computers are being used in the tutorial and simulation modes. Examples include interactive mannequin simulators and patient encounter simulations.

"Academic Computing at Waterloo—An Interview with Wes Graham." *Perspectives in Computing,* May 1982, pp. 40-48. A discussion of the development of academic uses of computers at the University of Waterloo.

Calkins, Andrew. **"Where the Money Is. A Guide to Funding for 1982-83."** *Electronic Learning,* May/June 1982, pp. 24-26, 78. An analysis of the funding picture for educational technology by leaders in public and private organizations.

Charles, Bernard S.; T. B. Galambos; and P. L. Gould. **"Microcomputer-Based CAD Systems in Engineering Education."** *Engineering Education,* May 1982, pp. 791-93. An examination of computer-aided design systems in engineering design instruction.

Cowen, Robert. **"Home Computing Revisited."** *Technology Review,* May/June 1982, pp. 6-7. A review of public comments on an article discussing the overglorification of home computing.

"Electronic Mail: Magic or Mania? A Tutorial." *EDUCOM Bulletin,* Summer 1982, pp. 30-32. An explanation of computer-based message systems.

"How Personal Computers Can Backfire." *Business Week,* July 12, 1982, pp. 56, 59. A report on information management problems in corporate offices resulting from the quality of data stored.

Isreb, Mustafa. **"Computer: A Teaching Aid For Structural Engineering Seniors at the University of Riyadh."** *Computers & Education,* Vol. 6, (1982), 271-82. An evaluation of a course using the computer as a teaching aid in Saudi Arabia.

Knezek, Gerald; Jay Able; and Charles Gordon. **"Micros, Minis and EDUNET at Hawaii Loa College."** *EDUNET News,* Summer 1982, pp. 1, 6. A profile of how computing resources are being put into use at Hawaii Loa College.

Nadler, Gerald, and Ali Seireg. **"Professional Engineering Education in the Classroom."** *Engineering Education,* May 1982, pp. 781-87. A profile of an interactive computer program being used to instruct engineering students through case study problem-solving.

"Pushbutton Sales Therapy." *Audio-Visual Communications,* May 1982, pp. 40, 70-73. A profile of the Mead Johnson Pharmaceutical Division's use of computerized hardware and software to educate its sales force about a new medical product.

"Strategies for Campus Computing." *EDUCOM Bulletin,* Summer 1982, pp. 20-21. A review of a collection of case studies on the planning processes of 10 universities involved in using computer technology.

"The Electronic Learning Software Directory." *Electronic Learning,* May/June 1982, pp. 1A-10A. A listing of 200 producers of educational software for computers.

"University Supermini Network." *Telecommunications,* July 1982, pp. 51-52. A profile of the University of Washington's computer network using two minicomputers for instructional purposes.

Radio

Behrens, Steve. **"Readers for Blind Seek Protection."** *Current,* May 28, 1982, pp. 1, 4. A report on a petition by radio reading service representatives to reserve an additional subcarrier to accommodate new commercial ventures and public service uses.

Gladstone, Brooke. **"Infant Indian Radio is Growing Fast."** *Current,* June 25, 1982, pp. 1, 5. A discussion of the development of Native American-owned and operated radio stations.

"NPR Explains New Data Service." *Broadcasting,* June 28, 1982, p. 59. A description of a digital data delivery service transmitted through National Public Radio FM subcarrier channels.

Satellites

" 'Be There Now': Learning Languages by Satellite," by Andrea Kavanaugh, *Satellite Communications,* July 1982, pp. 54-58.

Telecommunications technology can be used to teach applied skills (e.g., language) and general knowledge and concepts (e.g., history and culture) across cultural and national boundaries. This is the objective of the National Committee for Internationalizing Education through Satellites, Inc. (NCIES). NCIES is testing a learning systems model (LSM) that uses live, two-way audio/video satellite transmissions to teach functional language skills within the culture where the languages are spoken.

Headquartered at the University of Pennsylvania's Middle East Research Institute, NCIES is a nationwide group of specialists in foreign language and international studies, curriculum development, media production, satellite broadcasting, and communications law. Fifteen institutions in the U.S., Latin America, and the Middle East participate in the LSM project.

The LSM, which has been funded with grants from the National Endowment for the Humanities and the U.S. International Communications Agency, operates equally in two directions. Overseas students use the same system of live, interactive transmissions adapted to English language and American culture study. During any transmission, only one target language is employed.

Since the use of satellites becomes economical when large numbers of students participate in the transmission, the LSM is designed to maximize the number of students involved. Each pair of universities, including local networks (high schools, private businesses, government agencies, and continuing education programs), represent an estimated participating population of 2,040 students—at a per capita cost of about $2.50 per student per broadcast hour. Spot tests indicate further cost effectiveness in that there seems to be a reduction of 25% to 50% in the time needed to become functional in most languages.

Participating U.S. institutions include the University of Pennsylvania, University of Southern California, University of Hawaii, University of Nebraska, Michigan State, Syracuse University, Middlebury College, and Florida International University.

Baker, Jeri. **"The Boy on the Bike Has a Bird in the Sky."** *CableVision Plus,* June 28, 1982, pp. 14-18. A report on the launching of Westar V, the latest cable-carrying domestic satellite.

Ciapura, Dennis. **"Satellite Technology."** *Broadcast Engineering,* June 1982, pp. 28-32. A review of the satellite exhibits at the National Association of Broadcasters convention.

Hill, Arthur. **"The DBS RARC: U.S. Position Takes Shape."** *Satellite Communications,* June 1982, pp. 12-14. A review of the recommendations of the advisory committee involved in shaping U.S. policy on direct broadcast satellites (DBS) for the 1983 Regional Administrative Radio Conference.

Levy, Stephen. **"Living With a Satellite Dish."** *Channels,* June/July 1982, pp. 46-49. A commentary on the variety of programming choices available with a home satellite receiving dish.

Pirar, Theo. **"The French Telecom 1 Program and System."** *Satellite Communications,* June 1982, pp. 38-44. An examination of the French Telecom 1 satellite network.

Teleconferencing

Friedlander, Steven. **"The World As 'Global Village'."** *Audio-Visual Communications,* May 1982, pp. 18-22. A discussion of the growth of teleconferencing for business communications.

"The Sky Kings of Teleconferences." *Audio-Visual Communications,* May 1982, pp. 24-26. A listing of suppliers of teleconferencing services.

White, Niles. **"Arizona Flood Creates Wave For Satellite Communications."** *Satellite Communications,* June 1982, pp. 50-52. An examination of a statewide satellite network for emergency communications in Arizona.

Wesley, Michelle. **"Video-Teleconferencing in Higher Education."** *EDUCOM Bulletin,* Summer 1982, pp. 9-12. An explanation of video teleconferencing, its use in higher education, and costs.

Copy Delivery Systems

"An Innovative EET Program for Industry," by Charles B. Christie and George H. Elliott, *Engineering Education,* May 1982, pp. 801-4.

The Engineering Technology Department at the University of North Carolina at Charlotte (UNCC) offers a program that allows qualified Western Electric employees to obtain a B.E.T. degree in electrical engineering technology within three years while employed full-time at a Western Electric facility in Winston-Salem, 85 miles away. Videotapes are used in conjunction with standard classroom lectures to deliver the bulk of the program on-site at Winston-Salem.

Each course offered at the Western Electric facility is paired with an on-campus section of the same course. Classes meet twice weekly at each location. During a typical week, the first meeting of the on-campus section is conducted in the normal classroom; the second, in the campus TV studio, where it is videotaped for later playback at Western Electric. In Winston-Salem, the students receive a "live" lecture for the first class meeting of each week, followed by the videotape of the second, which is supervised by a designated proctor from Western Electric's Data Design Organization. Questions resulting from the videotape are handled by telephone calls to the instructor the following day. Lecture cards are provided for the Western Electric students.

The grade point averages of the Western Electric students have compared favorably with those of on-campus students.

The program seems to have served Western Electric's need for data designers—who translate complex design and technical information into various forms of user-oriented documentation for the equipment supply arm of AT&T. Individuals with two-year associate degrees have been hired but have been required to obtain a B.E.T. degree. UNCC offers the only baccalaureate engineering technology program in the state.

"A Summary of the Practicality and Potential of Videodiscs in Education," by Michael D. Hiscox, *Videodisc/Videotex,* Vol. 2 (Spring 1982), 99-109.

The effectiveness of the use of videodisc technology in public school instruction was studied in a two-year investigation conducted as part of the Alaska Innovative Technology in Education ("InTech") Project. It was found that the videodisc has a unique capability that can be useful in specific applications but that it is not really practical as a general solution to instruction problems.

Technology has become an important resource in Alaska education, particularly due to the vast distances covered. Microcomputers and educational television are relatively commonplace. The InTech Project is one of very few in which the merits of the discs have been studied before committing resources to large-scale programming and production.

Advantages of the videodisc include its durability, large storage capacity, still-frame and random access capability, and computer control. These make it suitable for storing visual images that otherwise would not be available, in replacing film and slide collections, and in the potential storage of digitally-encoded data.

However, there are limitations, including engineering as well as cost and software problems. Further, although there is potential for interactive videodiscs, there are major difficulties: inadequate reliability of equipment, complexity of the instructional program, difficulties in evaluating and revising disc-based programs, and costs.

The report concludes that the much-discussed use of videodiscs combined with microcomputers to present curricula individualized for each student has severe practical limitations and is not likely to have a substantial impact on teaching methods in the next decade.

Bentzinger, Carolyn C., and David Reis. **"Videodiscs That Are Out of This World."** *Drew,* June 1982, p. 20. A report on the production of six instructional videodiscs for aerospace education at Drew University.

Budd, John F., Jr. **"Telecasting the Corporate Annual Report."** *Public Communication Review,* Spring 1982, pp. 32-35. A review of Emhart Corporation's experiences with videotaping the corporate annual report and telecasting to shareholders in eight states.

"Conference on Copyright and Home Recording Sorts Out Issues." *Access,* June 2, 1982, p. MW1-3. A review of copyright issues discussed at a National Citizens Committee for Broadcasting seminar held in Rossyln, Virginia.

Heiss, Michael. **"The Home VCR: Is the Best Yet to Come?"** *Videography,* June 1982, pp. 85-87. A commentary on the current state of development in videocassette recording technology.

Holloway, Robert E. **"The Videodisc in Education: A Case for Technological Gradualism."** *Videodisc/Videotex,* Vol. 2 (Spring 1982), 132-37. A discussion of the gradual rate of videodisc technology transfer to education, and the relative merits of such a slow rate of technical adoption.

Hon, David. **"Standard Setters and Standard Bearers."** *Video User,* May 1982, p. 8. An examination of two high-quality videodiscs that set the standard for other interactive video modes.

"IBM General Systems Division Guided Learning Centers." *Videodisc News,* June 1982, p. 7. A discussion of self-study education program for buyers of IBM small computers, in which customers learn data processing with the aid of interactive videodiscs.

Marsh, Fred E. **"Videodisc Technology."** *Journal of the American Society for Information Science,* Vol. 33 (July 1982), 237-44. A description of two videodisc systems, their operation, applications, and reliability.

"National Training Fund to Use Disc." *Videodisc News,* June 1982, p. 4. A look at a videodisc replay program for the training of sheet metal workers.

Nugent, Ronald. **"Videodiscs Spin Into Educational Mainstream."** *Current,* May 28, 1982, p. 6. A report on the various uses of videodisc technology in educational and training settings.

Tackett, Helen. **"Taping Care of Business."** *American Libraries,* June 1982, pp. 426-28. A profile of a library of videotaped programs for business students at the University of Texas-Austin.

"The Homemade VCR Copy: Where Does It Fit In?" *The Videoplay Report,* May 24, 1982, pp. 1-3. A report on congressional action on the issue of imposing a royalty tax on home video recording.

"Videodisc Projects Directory." *Videodisc/Videotex*, Vol. 2 (Spring 1982), 139-50. A guide to projects involving applications of videodisc and optical disc technology in both the public and private sectors.

"Video Index '82, Guide to Production Services." *Video Systems*, May 1982, pp. 25-61. A directory of more than 850 companies and organizations offering production services for video and audio.

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MACROSCAN

Programs, projects, conferences, workshops, other events, and funding sources.

AID Assists Developing Nations With Audio Teleconferencing

Through two pilot projects of the U.S. Agency for International Development's (AID) Rural Satellite Program, the Eastern Islands University Association (Indonesia) and the University of the West Indies will install satellite-based audio teleconferencing systems to provide education, agricultural extension services, and development-related services to the campuses of both institutions.

The Indonesian Rural Satellite Project, initiated in June 1982, is a 30-month project that will provide a conferencing link for 30,000 students in a region of more than 350,000 square miles having a total population of more than 14 million. Faculty and administrators will use the system to develop and test teaching approaches and programs to upgrade teaching skills of faculty, increase students' access to basic sciences teaching, and offer students and faculty access to specialized resources. The results of this pilot project will be used to plan placement and use of the next generation of earth stations, as well as expanded use of the PALAPA satellite system for national development.

The two-year pilot project at the University of the West Indies will link three main campuses in Barbados, Jamaica, and Trinidad with extension centers in St. Lucia and Dominica to offer courses for credit towards a degree, focus on economic development and social welfare in the region, and conduct in-service training for agriculture extension agents.

Both systems will be completely interactive. For more information contact Sandra Lauffer, Academy for Educational Development, AID Rural Satellite Program, 1414 22nd St. NW, Washington, DC 20037; 202/862-1200.

Study of Statewide Plans For Technology Underway

Many institutions recognize the need to develop statewide coordinated approaches for implementing and accessing rapid developments in communications technology. Ronald Turner of the University of Missouri-St. Louis, is assessing other statewide plans in order to submit a proposal to the Missouri state legislature for funding. Plans currently being investigated include the Kansas plan for a cable with fibre optics allowing transmission of data, pictures, and other information, and proposals in Massachusetts to lay a cable technology spine across the state for access by all institutions.

Turner is seeking information from any institution involved in statewide efforts. Participants in Alaska, Colorado, Georgia, Indiana, Kentucky, Minnesota, Nebraska, Ohio, Pennsylvania, South Carolina, Texas, and Virginia have already been in contact. A listing of individuals directing other such statewide initiatives is expected once the study is complete.

Send information to Ronald Turner, dean, Continuing Education, 440 Woods Hall, University of Missouri, St. Louis, MO 63121.

68 Colleges Form National University Teleconference Network

Sixty-eight institutions of higher education have contributed $1,000 each through their divisions of continuing education to found the National University Teleconference Network, an independent network for the transmission and reception of audio and video teleconferences via satellite. Once the network is operational, people throughout the country will have access to educational programs developed by experts on an array of topics.

According to J.O. Grantham, director of university extension at Oklahoma State University, and originator of NUTN, the network will transcend geographical and financial constraints that have limited the ability of universities to disseminate useful information to professionals and laymen. For example, this new network would allow a Florida physician to go to the University of Miami to view the proceedings of a national seminar held at the University of Southern California Medical Center. A Texas homeowner might go to the University of Houston to receive information about underground housing presented in a broadcast from the University of Minnesota.

NUTN was initiated in March 1982, when representatives from 47 universities met in Kansas City to explore teleconferencing possibilities. The network became a reality following an audio teleconference involving the 47 institutions and a meeting of the Executive Committee at Oklahoma State University. In its first experimental phase, NUTN will put on one audio teleconference and three video teleconferences, which will be broadcast over closed-circuit television by satellite to the 68 member universities.

Oklahoma State University will serve as the interim operating agency for NUTN in its experimental phase. For more details, contact J.O. Grantham, director, University Extension, Oklahoma State University, 204 Whitehurst Hall, Stillwater, OK 74078; 405/624-6606.

Statewide System Links Students and Courseware

Under a grant from the Fund for the Improvement of Postsecondary Education (FIPSE), the University of New Mexico Telemedia Activities Service Center will assess hardware and courseware throughout the state and establish a statewide telecommunications network for education. The project, begun in October 1981, will span a three-year developmental period, after which it will be integrated into institutional and state funding sources.

An assessment of existing capabilities and the needs of potential users was completed last April. Over the next two years TASC will develop a telecommunications network linking education service agencies that provide courseware with traditional and nontraditional students. Once this network is operational, members will receive courseware tailored to their individual needs via technology. School systems, for example, will be able to offer advanced mathematics and specialty courses via microcomputer with a teleconference connect to qualified personnel located at the nearest participating institution.

Training workshops will provide technical assistance and appropriate training to insure that the network is used effectively. Topics will focus on service facilitation and mechanics of equipment use and potential. TASC will also preview courseware available from PBS stations and cable systems.

Evaluation procedures will monitor educational efforts and insure that telecommunications education remains effective, efficient, and of high quality.

Contact Amy Atkins, co-director, Telemedia Activities Service Center, College of Education, Onate Hall, Room 223, University of New Mexico, Albuquerque, NM 87131; 505/277-6615.

Telecommunications Information Center Opens at George Washington U.

The Center for Telecommunications Studies and Gelman Library at the George Washington University are cosponsoring a Telecommunications Information Center (TIC) to provide extensive reference resources and services in the areas of policy, management, and research in telecommunications.

Housed separately in the Gelman Library, the new Center will include books, documents, periodicals, and many unpublished fugitive documents. The TIC will become a depository for telecommunications materials on aspects of economics, technology, and regulation of broadcasting, cable communications, common-carrier (telephone and related services), communication satellites, teletext-videotext, electronic mail, mobile communications, and the combination of computers with these other technologies.

TIC will cooperate with existing corporate and government telecommunications libraries in Washington, D.C., and other areas of the country to provide services and materials to professionals and students working in all areas of telecommunications.

To date, two major donations have been received by the Center. A complete set of *Pike and Fischer Radio Regulations* was donated by the law offices of Chadbourne, Parke, Whiteside & Wolff. And the Cable Television Information Center has donated public information resulting from the cable franchising process in a number of cities over the past 10 years, as well as a number of related telecommunications trade journals.

For further information about the Center, contact Christopher Sterling, director, Center for Telecommunications Studies, George Washington University, Washington, DC 20052; 202/676-7062.

Institute on Cable TV Held at NYU

Leaders from the cable industry addressed 40 students in an institute on cable TV and advanced services presented this summer by the New York University Interactive Telecommunications Program. Discussed were key issues on services such as home banking, cable security, electronic publishing, and pay-per-view. The institute examined the economic, technical, and organizational factors that may influence the uses of these new services in the future. It is anticipated that proceedings from the institute will be published in 1983.

Other activities planned by the Interactive Telecommunications Program include a telecommunications clinic designed to provide nonprofit and community groups with an understanding of new communications technologies and services. The clinic will offer outreach to potential users of these services, hands-on experience for groups and individuals from the public sector, and training to prepare students to work as consultants or instructors in the field.

In addition, the program has received two grants: the first from the Atari Institute for Educational Research for the development of new uses for Atari microcomputers, and the second from the Benton Foundation to study local governmental and political uses of cable television.

For further details, contact Mitchell Moss, chairman, Interactive Telecommunications Program, 725 Broadway, New York, NY 10003; 212/598-3338.

Workshops Offered On Teleconferencing

Techniques for conducting business meetings and teaching by teleconference are the emphasis of two new workshops offered by the Kellogg Telephone Conferencing Services. The workshops are offered in response to the growing awareness and use of the new teleconferencing technology available today. Virginia Ostendorf, teleconferencing manager at Kellogg, will conduct the workshops.

The two-and-a-half-hour workshops are offered monthly, by telephone, for a fee of $200 per person. Private workshops can be arranged at group rates. More detailed information can be found in the brochures entitled "How to Teach by Telephone" and "How to Conduct Business Meetings by Telephone," available from Kellogg upon request.

Teleconferences are handled via the "meet-me-bridge" in Littleton, Colorado, which can interconnect locations anywhere in the world through regular dial-up long distance telephone circuits. The system handles conferences for voice as well as data connections. Teleconference participants simply direct dial the conferencing center and interconnection is made within a few minutes. The special circuitry in the system balances and adjusts individual circuits and reduces overall noise levels for high-quality conferences.

For more information, contact M.C. Cortes-Vergara, Kellogg Communications Corporation, 5601 S. Broadway, Littleton CO 80121; 303/794-1818.

Using Videodiscs in Higher Education

The videodisc in higher education was the theme for a series of seminars sponsored last spring by EDUCOM, a consortium of colleges and universities promoting the use of computing, communications, and information technology. Joan M. Sustik, of the Weeg Computing Center at the University of Iowa, gave seminar participants a comprehensive overview of the potential and limitations of videodisc technology as a means of supporting and expanding research and teaching goals.

The day-long session and accompanying materials described applications of videodisc technology at campuses across the country; identified resources required for videodisc development including costs, design, production capability, and staffing; and provided assistance in planning the use of videodiscs within the institutions represented by participants. A variety of references, including periodicals and program descriptions were among seminar materials.

Another series of the videodisc seminars is planned for late fall. For details about dates and locations contact EDUCOM, P.O. Box 364, Princeton, NJ; 609/734-1915.

Center Offers You

The Center for Learning and Telecommunications is expanding its services in the coming year to help you keep abreast of the rapid developments in telecommunications technologies and their uses in postsecondary education. In addition to producing bimonthly issues of* TELESCAN*, the Center will publish a directory of educational programs that use telecommunications and launch a new inquiry service to provide access to an array of information resources and contacts. Also available will be a complete, cross-referenced index to the six issues in Volume 1 of* TELESCAN*. Details on all of these new services appear below.

The Center is a program of the American Association for Higher Education, and recently received a two-year renewal grant of $370,000 from the Carnegie Corporation of New York.

Directory Highlights 70 Programs Using Telecommunications

This fall, the Center for Learning and Telecommunications will publish a directory and guide to 70 educational programs in the U.S. that use telecommunications to serve postsecondary learners. *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs* provides detailed information in 16 categories—including educational mission, technologies used, curriculum, faculty roles, enrollment, finances, future plans, resources available, and contact persons—making this book an invaluable tool for the professional in postsecondary education or communications.

Meeting Learners' Needs focuses on the wide range of instructional delivery systems that have a capacity to serve learners off-campus and on. The programs described in this directory use a variety of applications of five basic technologies: television, radio/audio, telephone, computers, and copy (audio- and videotapes). Some variations of these technologies include interactive cable, satellites, slow-scan television, audio and video teleconferencing, dial-access phone systems, and electronic blackboards.

This publication marks the first time this kind of important information has been compiled in a single volume. And by ordering now you can receive a special pre-publication discount of more than 20% off the regular price. **Order before November 1** and pay only $35 (after that date the price will increase to $45). Just fill in the attached form—you can charge your purchase on Visa or MasterCard.

Reserve your copy of this one-of-a-kind study that will become a requisite for anyone involved in telecommunications and education.

MEETING LEARNERS' NEEDS THROUGH TELECOMMUNICATIONS
A DIRECTORY AND GUIDE TO PROGRAMS
TELECOMMUNICATIONS TELECOMMUNICATIONS TELECOMMUNICATIONS

Index to Vol. 1 of *TELESCAN* Available

For new subscribers . . . If you missed the first volume of *TELESCAN*, you missed six issues filled with important information on people and organizations, reports and conferences, projects and programs, studies and reference materials in telecommunications and education.

Now you can catch up on nearly 1,000 news and information items, and do it simply with a complete, cross-referenced index. While supplies last, you can purchase the six back issues of Volume 1—September 1981 through August 1982—plus the *TELESCAN* index (together a $42.50 value) for only $30. Just check the appropriate box on the order form.

For current subscribers . . . You can order your copy of the index to Volume 1 of *TELESCAN*—cross-referenced, with almost 1,000 entries—for $7.50. Just check the box on the order form at right.

Expanded Services for '82–83

New Inquiry Service Will Link Subscribers To Center Database Beginning in January

In January 1983 the Center for Learning and Telecommunications will launch the pilot phase of a new service to offer subscribers access to its extensive information and network of contacts in the areas of telecommunications and postsecondary education. This computer-based inquiry service will cross-reference our two growing databases: the general literature and current events provided by *TELESCAN* and the program-specific information from *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs.*

We will use the pilot phase to refine the service—both the underlying databases and the procedures for response—based on the types of inquiries we receive. Thanks to the support provided by the Carnegie Corporation of New York, we are extending this very special opportunity to *TELESCAN* subscribers: *six months of free, unlimited access to the service, until June 30, 1983.*

For an idea of how the service will operate, here's a sample question. An assistant commissioner on a state coordinating board asks, "How can we assist educators in negotiations for a cable franchise?" A search through the computerized database would yield the following:

- citations of articles, books, and reports on the cable franchises;
- materials and proceedings from conferences, workshops, and seminars
- names of contact persons at institutions and national, state, and local organizations;
- names of resource persons with experience in locations where franchises have been awarded.

Users of this service will receive a computer printout of the information with complete details on how the documents can be obtained, along with the addresses and phone numbers for the contact persons. Following the initial computer search, Center staff will review the data, adding new information and making notations on which of the items will be of most help to the inquirer. New data resulting from the staff review will be entered into the computer. Thus, the system will expand in response to the information needs of its users.

Your subscription to *TELESCAN*, Volume 2, will entitle you to free, unlimited access to this inquiry service during the six-month pilot period. (Once this pilot phase is ended a separate user fee will be instituted.) Take advantage of this opportunity to work with us in developing this vital new service.

Subscribe now to *TELESCAN* and you'll receive six issues (September 1982 through August 1983) covering the latest news and information on telecommunications and postsecondary education, *plus* six months of access to the Center's new inquiry service—all for only $45 ($40 for members of the American Association for Higher Education).

Just check the box below, and enclose your check, payable to Center for Learning and Telecommunications—or charge it on your Visa or MasterCard.

Please note that you must be a current subscriber to *TELESCAN* to be eligible for the inquiry service. Don't miss out. Be sure you've renewed your subscription to Volume 2!

Order Form

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☐ Please enter ___ subscription(s) to *TELESCAN,* Volume 2, and unlimited access to the inquiry service from January 3 to June 30, 1983—$45 per subscription ($40 for AAHE members). Add $5 for each subscription outside the U.S. Subscription: $ ______

☐ Yes, reserve me ___ copy(ies) of *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs* at the special prepublication price of $35 each (for orders received before November 1, 1982—after that price is $45). Add $2.50 postage per copy for orders outside the U.S. Directory: $ ______

☐ Send me ___ set(s) of Volume 1 of *TELESCAN* (September 1981–August 1982) *plus* the cross-referenced index, at the discounted price of $30 per set. Add $1.50 postage per set for orders outside the U.S. Volume 1: $ ______

☐ Send me ___ copy(ies) of the index to Volume 1 of *TELESCAN,* at $7.50 per copy. Index only: $ ______

All orders must be prepaid. (Sorry, we cannot process purchase orders without payment.) Make checks payable to Center for Learning and Telecommunications. Or charge to your Visa or MasterCard (*circle one*):

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Mail to: Center for Learning and Telecommunications
One Dupont Circle, Suite 600, Washington, DC 20036

Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

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University of New Mexico
Sue Buske
National Federation of Local Cable Programmers
Robert Dean
Georgia Institute of Technology
Susan Fratkin
National Association of State Universities and Land-Grant Colleges
Jinny Goldstein
Public Broadcasting Service
Michael Goldstein
Dow, Lohnes and Albertson
Carol Katzki
National University Continuing Education Association
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Miami-Dade Community College
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The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUE 8

Report on Federal Funding for Telecommunications and Education

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New Jersey institute offers computer access to high school students ... **page 11**

by Michael Goldstein, Dow, Lohnes & Albertson

A year ago, there was a great deal of change in the air for both public telecommunications and postsecondary education. The administration was proposing drastic reductions in the level of federal support for both public broadcasting and higher education, and there seemed to be a feeling that much progress that had been achieved over the years was in dire jeopardy. Considerable fear was raised that reductions in funding for public broadcasting would be felt most severely at the instructional end, and there was similar concern that sharp cuts in federal student aid and institutional support would be heavily weighed against the nontraditional student (the primary user of telecourse materials) and nontraditional delivery systems. After all, the reasoning went, one must protect the baseline (read traditional) programs.

The picture is far from rosy, but neither is it as black as some predict. The Congress, after a first round of turning belly-up to administration demands, developed a new infusion of spine in its second session. The administration's proposed cuts in student aid programs were rejected virtually out of hand (although some changes in the Guaranteed Student Loan program have created what must be described as panic among students who believed—for the most part incorrectly—that they were excluded from participation). Its effort to sharply reduce federal support for public broadcasting by cutting back funding for the Corporation for Public Broadcasting (CPB) and eliminating entirely the Public Telecommunications Facilities Program (PTFP) was similarly curtailed by the Congress. Although cuts were made, the levels of support for both programs remains just barely at operationally feasible levels, and the stimulus of threatened cuts has at the same time enabled public broadcasting entities to maintain fund raising efforts in the face of a generally dismal economic situation.

Such activities as the Temporary Commission on Alternative Funding and a study sponsored by the National Association of Broadcasters have shed new light on the mix of funding that is possible to support public telecommunications, while the Federal Communications Commission (FCC) has greatly liberalized over-the-air fund raising regulations and commenced major rule makings to allow public broadcasters to mix commercial and noncommercial uses of subscription television and subcarrier services. *Finally*, the chairman of the FCC has recently begun speaking of the possibility of commercial fund raisers paying a spectrum user fee that would be used to support public broadcasting.

On the higher education side, essentially steady-state student aid funding has not resulted in the enormous dislocations the proposed cuts would have caused. However, steady-state funding, even with reduced inflation, still constitutes negative growth, and coupled with sharply reduced state revenues (and therefore greater difficulty in fully funding state university systems and student grants), there remains a chill in the postsecondary community. Student enrollment in the independent sector appears to be down substantially, a change attributed as much to misinformation about the availability of student aid as anything else. (Of course, until hard numbers are reported, any prognostication of postsecondary trends is at best risky. Statisticians predicting a drop in enrollments for the past four years have usually been wrong).

Assuming for the moment that from a financial perspective imminent doom is unlikely, there remain still serious problems facing the instructional telecommunications community. The revenue pinch is likely to continue, with the attendant increasing tension between maintaining the status quo and reaching out to new constituencies through new delivery systems. The innovative funds available through the old Title I Community Services (which became the ill-fated Lifelong Learning Act) are gone, and are unlikely to see early resurrection. Similarly, the activities of the National Institute of Education came under fire from conservatives, with a resultant retrenchment (although Secretary Bell did make a point of advocating computer

(continued on p. 2)

CAPITOLSCAN

Washington-based, national initiatives involving uses of telecommunications in higher education.

A New Season for PBS Adult Learning Service

As the PBS Adult Learning Service begins its second operational year, a roster of new participants has joined public television's educational partnership. Fifty colleges have been added to the 555 institutions that participated in the service last year. Also participating in the service for the first time are eight public television stations, adding to the 237 already involved in the effort. Locating these colleges and stations on a map of the United States reveals a very interesting phenomenon—there is only one state that has not yet used the service.

Early reports indicate that the number of course offerings by colleges and stations is increasing by nearly 20 percent over last spring—to a total of 900 this fall. This success is attributed to greater lead time for planning and promotion of the courses, the experience gained through last year's participation, and the Adult Learning Service's marketing and promotional support.

The second annual PBS Adult Learning Screening took place on September 14, affording colleges and stations the opportunity to provide PBS with their program preferences for future adult learning schedules. This information was used in the development of the summer and fall, 1983, schedules that were announced at a national teleconference on November 3. The timely announcement of these schedules provides colleges and stations ample time to evaluate and to select the courses that meet the academic needs of their clientele.

The PBS schedules include a cross-section of academic areas from which institutions can develop local schedules. Along with the courses in the nationally distributed schedules, there are more than a dozen others that PBS can license to colleges through their local stations, thereby maximizing the curriculum options available to institutions.

A new initiative of the PBS Adult Learning Service is the marketing of ancillary print materials for informal learners interested in the broad educational value of public television programming. According to viewer studies undertaken by the PBS Research Department and A.C. Nielsen Company last spring, some 2.5 million people watched one or more of the PBS-distributed television courses during a single week. Recognizing that the large majority of these viewers were not interested in the instructional value of the series, the Adult Learning Service created a plan to meet the needs of these informal learners.

In its current experimental year, the PBS staff is helping stations to develop strategies for marketing the ancillary materials specifically to those segments of the viewing audience that want to learn more about the subject of a series but will not enroll for formal study. In cooperation with WNET, play guides are being offered to accompany individual plays in the SHAKESPEARE PLAYS series; and in cooperation with the Southern California Consortium, a special viewer's guide has been developed for the PERSONAL FINANCE television course. These materials are being offered at a modest cost. Their availability is being announced on-air by participating stations to increase public awareness of these educational resources. Materials for other public television series will be offered in the spring.

Information about the adult learning schedules, as well as the other activities and services of the PBS Adult Learning Service, is available by calling or writing the PBS Adult Learning Service, 475 L'Enfant Plaza, SW, Washington, DC 20024; 202/488-5360.

Federal Funding

(continued from p. 1)

literacy). However, the well-regarded Fund for the Improvement of Postsecondary Education continues to be the apple of Congress' eye, and its latest funding round shows considerable interest in the applications of the new technologies to postsecondary education.

On the telecommunications front, there is the threat of a drastic reduction in the instructional television fixed service (ITFS), resulting from a proceeding now before the FCC at the behest of several commercial entities who want many of the ITFS channels made available for commercial exploitation. Competing head on against this effort is much of the higher education community and the Public Broadcasting Service, which is proposing to use available ITFS spectrum space for the National Narrowcast educational service. Likewise, while the PTFP and CPB have received funding reprieves (PTFP with $15M funding for next year and CPB receiving a further supplemental appropriation), continued budgetary stresses may jeopardize their support.

In all, the good news is that the bad news wasn't as bad as expected. It is a commentary on the times when escaping the executioner is considered a victory.

Four New Project Awards From Annenberg Funding

In its second round of funding, the Corporation for Public Broadcasting/Annenberg School of Communications (CPB/ASC) Project announced the selection of four new projects that could total some $3.5 million—$1.5 million short of the $5 million budgeted for each biannual round of funding. Final commitments and funding levels will be based on budget, production schedules, work scope, and other contractual arrangements. The four new projects are:

- Individual Rights and Public Policy, an undergraduate course introducing students to the Constitution. Proposed by Media and Society Seminars of the Columbia University Graduate School of Journalism in association with WNET/Thirteen (New York) and WTTW/Channel 11 (Chicago), the project's senior advisor and producer is Fred W. Friendly, Edward R. Murrow Professor Emeritus of Journalism at the Columbia Graduate School of Journalism.
- Visual Mathematic Applications Project, a package of 30 half-hour television programs and accompanying text and test materials will deal with math applications in Management Science, Politics, Growth, Computers, Choice and Change, and the Physical Universe. Additional funding is needed to complete this project by the Educational Development Center, Inc., and the Consortium of Mathematics and Its Applications (Newton, Massachusetts).
- Global Understanding consists of two college-level courses each having 15 half-hour radio programs and supporting text materials designed to examine two regions with extensive ties to the United States, China/Japan and Western Europe. The project was proposed by National Public Radio in conjunction with faculty from the University of California-Berkeley, the Institute for Western Europe at Columbia University, Johns Hopkins University, Boston College, and the American Political Science Association.
- American Vision, a research and development project designed to lead to

a television course surveying the history of American art. The project is proposed by the Metropolitan Museum of Art (New York).

For further information about the next round of awards contact CPB/ASC Project, Corporation for Public Broadcasting, 1111 Sixteenth Street NW, Washington, DC 20036; 202/293-6160.

Task Force Reports On Radio Programming Service for Adults

In its report to the Corporation for Public Broadcasting, the Adult Learning Services Task Force at National Public Radio (NPR) examined issues related to the establishment of a radio/audio instructional programming service to meet the needs of adult learners. Based on the findings of several surveys conducted by the project, the task force concluded that the need exists for a centralized structure, which they titled "ENTITY," to facilitate production, marketing, and adoption of radio/audio postsecondary programming among users, broadcasters, and producers.

In this role ENTITY would serve as "executive producer," securing funding for production; selecting producers, instructional designers, and content experts; administering grants; and managing publishing and distribution arrangements. The task force further recommended that the Education Services Department at NPR seek additional funding for the development of a business implementation plan that would include staffing, governance, institutional sites, marketing studies, inventory of quality courses already produced, and potential funding resources.

More information can be obtained by contacting Karen Kearns, Educational Services Department, National Public Radio, 2025 M Street NW, Washington, DC 20036.

Basic Skills Education Using Telecommunications

Using the new communications technologies to improve the effectiveness of basic skills teaching and learning is the objective of a 21-month project implemented by the Association for Educational Communications and Technology under contract to the U.S. Department of Education. Project BEST (Basic Education Skills through Technology) uses a variety of technologies to address the needs and concerns of state and local education agency personnel responsible for the inservice training of teachers in the basic skills area. These include video and audio teleconferencing, videotaped training modules, telephone hotline services, and microcomputers.

Most recently, Project BEST initiated its electronic mail system, known as BEST NET. The system links 43 state sites, 10 U.S. Department of Education regional offices, and Project BEST headquarters in an information exchange of conferences, meetings, and seminars; on applications of technology for education; citations of current publications, ongoing studies and projects; problems from the field; and software.

Inquiries about the project, as well as information to be contributed by interested individuals, may be addressed to Henry T. Ingle, director, Project BEST/AECT, Suite 214, 1126 Sixteenth Street NW, Washington, DC 20036.

New Programming Design For Appalachian Network

The Appalachian Community Service Network has announced a new conceptual design to meet the needs of adult learners. Recognizing that adults' learning needs often go beyond courses offered for academic credit, and that they are often forced to continue their education well into their careers, ACSN-The Learning Channel has created four new groups of programs to meet these needs. These categories are in addition to the traditional telecourses and in-service programs, and complete the network's new look.

For people who are experiencing a career transition, re-entering the work place, looking for their first job, or just interested in "Getting Ahead," there are many programs in career development. Professionals whose careers demand always "Staying Ahead," might be interested in the array of professional development programs offered at convenient times early in the morning and on weekends. These series are useful to the small business operator, to the professional who needs to know about computers, to the manager who wants to improve his or her management skills, and to many others.

"Learning the Latest" programs keep you up-to-date on the world around you. And, finally, for everyday "Learning for Life," ACSN-The Learning Channel has personal enrichment and how-to programs that are fun and rewarding, as well as educational. To find out more about ACSN-The Learning Channel, write to: 1200 New Hampshire Avenue NW, Suite 240, Washington, DC 20036; 202/331-8100.

Computer Projects Receive Grants

In 1982, the U.S. Department of Education's Fund for the Improvement of Postsecondary Education received an unprecedented 2,246 proposals in its annual comprehensive program grant competition. This number represents a 36 percent increase in the number of proposals received in 1981 and is due, in large part, to a significant increase in the number of proposed programs that intend to utilize electronic technology to serve learner needs. Of these technology-oriented proposals, roughly 7 in 10 focus on the educational uses of computers.

Computer-assisted instruction (CAI) and the preparation of software for CAI programs continue to be the subject of numerous applications. Two awards were made that will further develop previous FIPSE work in this field:

- The University of California-Irvine is developing a set of 14 computer-aided instruction programs for use in introductory physics courses. Based on recent research into improving student mastery of physics concepts, topics will include problem solving, formal reasoning, and mathematics skills.
- Computer-based courses in chemistry, biology, physics, and psychology developed by the University of Iowa will be produced by a national committee of authors, and disseminated by CONDUIT and a publishing firm concerned with educational software.

Word processors and their use in teaching composition form the basis of two awards:

- Drexel University will teach technical writing to upper-division engineering students using word processors and associated instructional programs. This project is intended to explore how composition and theme revision can be assisted via word processor-based technologies.
- A program at the University of Minnesota is intended to help students to elaborate initial ideas, clarify the intended audience, and revise work in the production of a finished product using an integrated, computer-assisted system.

The remaining three awards went to programs that pursued a number of different objectives ranging from computer-based academic advising to the use of videodisc technology in the teaching of undergraduate biology:

- The University of Delaware will design and implement five modules using the PLATO system to assist students in exploring academic options, in developing individualized programs, and in learning about curriculum regulations and academic requirements.

- Faculty from seven colleges and universities will take advanced courses at Ohio State University, participate in research, and develop courses in computer science.
- The University of Washington will improve instruction in five subfields of biology including genetics, botany, and zoology by using videodiscs to demonstrate laboratory experiments and to present visual material which would not normally be possible to produce in the laboratory.

Due to the widespread availability of low-cost microcomputers, it is likely that the 1983 Comprehensive Program once again will receive large numbers of computer-based proposals. As had been the case in previous years, projects that propose to expand educational uses of these machines into relatively unexplored fields or that will expose underserved populations of students to this technology will be of particular interest.

Also high on the list of priorities for this year's competition will be projects adapting existing materials and courseware for local use, or finding strategies for making them more widely available. More information about the Comprehensive Program and computer projects may be obtained by calling the Fund at (202) 245-8100.

NOW AVAILABLE!

Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs, by Raymond J. Lewis (research director, Center for Learning and Telecommunications).

For the first time ever there is a single source of information about 70 instructional programs throughout the U.S. which use communications technologies for postsecondary education. It is the only reference book concentrating exclusively on higher education programs that can serve adult learners on-campus and off.

To order your copy, send a check or money order for **$45** to the Center for Learning and Telecommunications. Add $2.50 postage per copy for orders outside the U.S. **Sorry, purchase orders will not be accepted without accompanying payment.** Master Card and Visa charges are accepted. For more information, call 202/293-6440.

PRINTSCAN

Abstracts and bibliographies of articles appearing in periodicals from July 15 through September 15.

Innovative Concepts

Boyd, Gary M. "**Four Ways of Providing Computer-Assisted Learning and Their Probable Impacts.**" *Computers and Education*, Vol. 6 (1982), 305-310. An analysis of four modes of computer-assisted learning and the ways they relate to specific learner needs.

Butler, David, "**22 Obstacles to Educational Innovative and How to Overcome Them.**" *Instructional Innovator*, September 1982, pp. 18-20. A discussion of obstacles to innovative uses of technology in educational organizations and suggested solutions.

Marcus, Jane E. "**Using History to Shape Policy for Educational Technology.**" *Journal of Educational Technology Systems*, Vol. 11 (1982-1983), 75-81. A view of past and present factors and situations that have affected the introduction of computers into educational institutions.

Schmidt, William D. "**Educational Technology in College Teaching.**" *Educational Technology*, September 1982, pp. 46-48. A look at several innovative programs using television for instruction.

"**Telecommunications Conference.**" *The Pennsylvania Connection*, Summer 1982, pp. 2-8. A report on a conference that focused on a statewide telecommunications project in Pennsylvania.

"**Who Will Dominate the Home of the Future Market?**" *Cable Communications*, August 1982, pp. 18-19. An analysis of a study on the major competitors in the market for providing telecommunications services to the home.

Legal/Regulatory Issues

"**Cable Copyright Stuck on A Snag.**" *Broadcasting*, August 30, 1982, pp. 27-28. A report on the proposal of new amendments to the cable copyright compromise which brought negotiations to a standstill.

"**11th ACUTA Conference Convenes at U. of Md.**" *Communications News*, September 1982, p. 64. A report on the Association of College and University Administrators conference featuring speakers on the impact of regulation and new technologies on campuses.

Fields, Howard "**Cable Copyright Battle Reaches Its Armageddon.**" *CableAge*, July 26, 1982, pp. 6-11. A review of the interests involved in and the issues surrounding the passage of cable copyright legislation.

"**House Hears Other Side to Home Taping Issue.**" *Broadcasting*, August 16, 1982, p. 49. A report on the continued debate about a royalty fee to be imposed upon manufacturers of audio and video recorders.

Parker, Everett. "**New Video Technology: Who Will Benefit?**" *Video User*, August 1982, p. 27. An address calling for a national communications policy to protect consumer interests in the new technologies.

Broadcast Television

"**Educational Television: The Gulf Between Researchers and Producers,**" by I. Hart, *Journal of Educational Television*, Vol. 8 (1982), 91-97.

Television, which has become a respectable educational tool, is now being scrutinized by researchers. However, researchers and television producers have different perceptions of the medium, which is more complex than the experiments analyzing it. Unfortunately, much of today's educational television is being made by people who do not like movies or appreciate the art of movies, and much research is being done by academics who are unaware of the large amount of critical literature on the cinema.

One researcher points out that more study is necessary of the actual process of learning from television and the mental skills that are best developed through television. Although television is a mass medium through which viewers expect to be entertained, educational researchers tend to concentrate on the mechanics of the production and not on the program itself. Regarding mechanics, other researchers point out that segments of between 15 and 18 minutes are the most effective for learning since that amount of time is about the maximum concentration span of a postsecondary student.

To be most effective, educational television needs to encompass the approaches of both producers and researchers. That is, to focus on the entertainment quality of a program itself in the production process will enhance the learning process.

Allen, Robert G. **"Application Problems and Pitfalls."** *LPTV Currents,* August 1982, pp. 1-2. A review of an FCC public notice that advises low-power television applicants of the problems involved in amending their applications.

"And, Now, A Word from Our Sponsor." *Broadcasting,* July 19, 1982, pp. 68-70. A discussion of broadcasters' responses to the advertising experiment on PTV.

"Farm Data Service Kicked Off by PBS." *Broadcasting,* August 9, 1982, p. 62. An announcement of a new service to provide farmers with agricultural marketing data that will be transmitted by the public television's closed-captioning system.

"Federal Funds Preferred." *Electronic Media Edition,* July 8, 1982, p. 2. A review of a report to Congress by the Temporary Commission on Alternative Financing for Public Telecommunications that indicated that federal financing is preferable to corporate advertising for public TV and radio.

Gladstone, Brooke. **"Stations Pitch Hard for Ads with 10 Months Left in Test."** *Current,* September 17, 1982, pp. 1-4. A report on the progress of the public broadcasting advertising experiment.

Harrar, George. **"Case Study: Captioning at WGBH."** *Broadcast Engineering,* July 1982, pp. 18-30. An examination of the Caption Center at WGBH (Boston, MA) and new services planned that will incorporate teletext.

Hoffman, Leon C. **"Adding Apples and Oranges: Telecourses are Both Different and Important."** *T.H.E. Journal,* September 1982, pp. 115-117. A commentary supporting the economical and educational advantages of using telecourses for instruction.

"Making Adult Education Broadcast Telecourses Pay: PBS Starts Second Year." *Videoplay Report,* August 30, 1982, p. 1-3. An overview of participation in the first year of the Adult Learning Service at PBS.

"Public TV Experiment: Going National." *Broadcasting,* August 30, 1982, p. 90. A report of a joint venture by seven stations currently involved in the PTV ad test to attract national advertising.

Reed, William T. **"Keep ITFS Slots for Education."** *Broadcasting,* September 13, 1982, p. 10. A commentary on the need to maintain the instructional television fixed service channels for education.

Rossiter, Huw. **"BBC School Television: The First 25 Years."** *Journal of Educational Television,* Vol. 8 (1982), 127-132. A look at the development of television education in the United Kingdom, as well as future plans for the technology.

Cable Television

"Special Report: Cable's Educational Potential. Part I, Local Uses." *CTIC CableReports,* August 1982, pp. 4-5.

It is anticipated that significant increases in educational access and production will be found among cable services soon. Several trends account for educators' growing interest in cable: (1) changes in public schools (effects of inflation and funding cutbacks), (2) increases in the demand for adult education, (3) availability of cable, and (4) formation of advisory committees or consortia, with educators making recommendations to franchising authorities.

Among the school uses of cable is programming for target audiences of special students, including gifted, handicapped, and deaf students. Some school systems are also using cable for bilingual educational local access, school outreach, and interactive programming.

Postsecondary uses for cable are focused in public two-year colleges, although 71% of all colleges and universities use television. Postsecondary outreach applications of telecourses are varied: certification, credit toward advanced degrees, and professional continuing education.

In the adult education field, cable programming is reaching new community members: homebound mothers, handicapped, dropouts, unemployed, senior citizens, and prisoners. A Spartansburg, SC, program on child care, for example, has had high demand from new parents. Nontraditional educational suppliers are also involved; state funds in Amherst, NY, support homebound instruction to disabled children.

"Systems Face Realities of Selling Older Viewers." by Robert M. Hausman, *CableAge,* August 9, 1982, pp. 11-12.

Television viewers over age 50 are a "tough sell" when it comes to cable subscriptions, even though this age group tends to watch more television than the average family. As a result, at least three program services have targeted marketing approaches to attract the older viewer.

In some cases, programming itself is being influenced by the preferences of the older group. For example, a talk show featuring issues facing over-50s is programmed to attract viewers in that age bracket. Health, travel, and cultural arts programming have proven to be of particular interest to older adults viewing cable.

One reason for the interest in this age group is the potential consumer value. The affluent older viewers are a particular target audience that cable advertisers hope to reach due to a 1980 study that shows this group growing at a rate twice that of the general population.

Black, Hawley L. **"Telecable Videotron's 'Vidacom': A Progress Report."** *Cable Communications,* August 8, 1982, pp. 12-15. A profile of a cable system in Quebec, Canada, that offers videotext and transactional services.

Booth, Ethel Greenfield. **"How a Small MSO Makes It Big."** *TVC,* September 15, 1982, pp. 90-92. A profile of New England Cablevision and the variety of programming options available to the communities it serves.

"Franchise Fulfillment: A Cable Scorecard." *TVC,* August 15, 1982, pp. 34-35. An account of the debate between the cities and the cable industry over legislation for a national franchising policy.

Gits, Victoria. **"Howard Anderson."** *CableVision Plus,* August 19, 1982, pp. 5-11. An interview with the president of a marketing and research firm who discusses the future of interactive services on cable.

"Hey Kids, Let's Make a Show." *CableVision Plus,* July 19, 1982, pp. 5-22. An overview of six cable systems and community programming.

Hill, Arthur. **"Cable and Washington—Beating the Clock."** *TVC,* September 15, 1982, pp. 70-72. An examination of the many legislative issues concerning cable still to be resolved before the November elections.

Marks, Jill. **"OUTRAGEOUS! How Franchise Demands have Escalated."** *TVC,* August 15, 1982, pp. 48-50. A discussion of the rising demands put upon cable operators for increased service capacity in franchise negotiations.

Metz, Brad. **"DBS, Cable TV Marketing War a Future Possibility."** *CableAge,* August 23, 1982, pp. 6-10. A discussion of the competition between direct broadcast satellites and cable systems for subscribers.

Mueller, Milton, **"The Future of Cable: Up in the Legal Air."** *Access,* August 1982, pp. 2-5. An analysis of the conflicting regulatory policy for cable at the state, local, and federal level.

Pomeroy, Dave. **"Cable '82: Growth and Maturity But What About the Public?"** *Access*, July 1982, p. 4. A review of sessions and speakers at the National Cable Television Association convention.

"Public Goes Pay." *CableVision*, August 9, 1982, p. 13. A report on a PBS plan to market its programming to pay cable and subscription TV.

Rathbun, Robert. **"Cable TV Production a Natural for Libraries."** *Video User*, August 1982, p. 8. A discussion of the role of libraries in producing community programs on local access channels.

Sambul, Nathan J. **"New Outlet for Corporate Video?"** *Video User*, August 1982, p. 1, 25. A discussion of the prospects for nonentertainment companies to produce cable programming for the general public.

Spillman, Susan. **"Rush for Cable Franchises Slows As Markets Dwindle."** *Electronic Media Edition*, August 5, 1982, p. 19. A report on the declining number of major markets still to be wired and the increasing costs to cable systems for these franchises.

Yovovich, B.G. **"The 'Age of Cable' Dawns As World Impatiently Waits."** *Electronic Media Edition*, July 1, 1982, p. 18. An examination of the development of cable and projections for the future of the industry.

Teletext/Videotext

"A Videotex(t) Question." *Broadcasting*, August 2, 1982, pp. 60, 61. A commentary on the correct spelling of videotex(t).

Cote, Kevin. **"Germany Sets Videotext."** *Electronic Media Edition*, July 1, 1982, p. 14. An announcement of the introduction of a national videotext system in Germany.

Forkan, James P. **"Text, Graphics Advances Add Twist to Videotext '82."** *Electronic Media Edition*, July 8, 1982, p. 4. A review of the Videotext '82 exhibit held to showcase teletext/videotext hardware and software, and which featured the latest advances in text and graphics display.

Hammett, Jim. **"Turning a Potential Enemy into An Ally."** *Advertising Age*, pp. M44-45. An account of several newspaper owners' views on incorporating videotext as a compliment to their publications.

Johnson, Brad. **"Knight-Ridder Plans Teletext for Detroit."** *Electronic Media Edition*, August 26, 1982, p. 4. A report on a joint venture between a Detroit newspaper and two local cable companies to provide a 24-hour news, sports, and information channel.

Marbach, William D., Janet Huck, and Phoebe Hoban. **"The Videotext Revolution."** *Newsweek*, August 2, 1982, p. 55. A discussion of the variety of information that videotext services will bring into the home and the relationship between this and other existing technologies.

Levine, Carl. **"Electronic Information: An Introduction to What Lies Ahead."** *Electronic Learning*, September 1982, pp. 66-103. An explanation of the methods of electronically-transmitted information and a review of experimental projects that test the commercial potential and educational applications of teletext/videotext.

"NABTS—What It Can Mean to Teletext/Videotext." *E-ITV*, September 1982, p. 41. An excerpt from a book on teletext specifications which explains NABTS, a technique that enables incorporation of system advances without making equipment obsolete.

Mermigas, Diane. **"Keyfax Teletext Magazine Set For Debut in November."** *Electronic Media Edition*, August 26, 1982, p. 4. A description of the first national, 24-hour consumer teletext magazine which debuted in November.

Milmo, Sean, **"Telecom Eyes U.K. Consumer."** *Electronic Media Edition*, June 17, 1982, p. 23. A discussion of the marketing difficulties faced by the British videotext system, Prestel.

"Newslink Videotext Service Foresees Ads." *Electronic Media Edition*, July 22, 1982, p. 11. An announcement of a Los Angeles videotext news and information service for the entertainment industry.

Roizen, Joseph. **"Teletext—A Service That's Coming of Age."** *E-ITV*, September 1982, pp. 39-40. An examination of several experiments that are providing a profile of the future for teletext services.

Sugg, John. **"K-R Study: Videotext to Cut into Commercial TV."** *Advertising Age*, July 1982, p. 44. A report on the results of a study of consumer usage of videotext in Miami, Florida.

"TM Videotext Gets Into Partnerships with Local Papers." *Electronic Media Edition*, July 8, 1982, p. 4. A discussion of Times Mirror Videotext Services forming partnerships with local newspapers in major U.S. markets.

"U.S. Advances International Videotext Standard." *Broadcasting*, July 26, 1982, p. 30. A report on a proposal by the U.S. for a unified standard for manufacturers of videotext systems.

"Videotext: Systems Vie for U.S. Market." *Electronic Media Edition*, June 17, 1982, p. 23. A comparison of the development of a consumer market between teletext and videotext in the U.S.

"What's Going On in Teletext and Videotext." *E-ITV*, September 1982, pp. 42-44. A review of videotext services, present and future, and a variety of tests now underway.

Computers

"Computers and the Postindustrial Society: Symbiosis or Information Tyranny?" by Susan Artandi, *Journal of the American Society for Information Science*, Vol. 33 (September 1982), 302-307.

Some of the consequences of computerization to social structure and an individual's self-value and value to society are discussed in this article on postindustrial society. Postindustrial society is defined as a new social framework based on the economic and social impact of telecommunications. Information and theoretical knowledge are identified as the "strategic resources" of such a society. Three dimensions are identified of this society: (1) change from a goods-producing to a service society, (2) centrality of knowledge codification for innovation in technology, and (3) creation of new intellectual technology.

The merger of the technologies of communication and computers into an "information revolution" is seen to be as significant as the Industrial Revolution. However, several social concerns are identified, such as the preservation of privacy; data security (the protection of information in large data banks); and the effect on the workplace, where some jobs have been eliminated, others created, and workers possibly dehumanized.

The article suggests that to avoid "information tyranny," there is a need to intelligently assess needs and plan for the future to create a symbiotic relationship between technology and the individual and society.

"Effectiveness of a Computer-Based Reading Comprehension Program for Adults," by Stephen M. Alessi, Martin Siegel, Dorothy Silver, and Hank Barnes, *Journal of Educational Technology Systems*, Vol. 11 (1982-1983), 43-57.

The instructional effectiveness of 20 hours of computer-based reading for disadvantaged adults is shown in this article. The lessons taught the reading comprehension subskills of information finding paraphrasing. Of a group of 36 adults who studied either the computer-based reading lessons or mathematics lessons for two months, the reading lesson group improved significantly above the mathematics group.

The reading comprehension program is part of the PLATO Corrections Project. It was evaluated for both its effectiveness and its "holding power" with pre-GED students at the Sheridan Correctional Center in Sheridan, Illinois. Students studying the reading lesson required an average of two months to complete all 40 lessons, working about four days per week.

Pretest, immediate posttest, and delayed posttest measures reflected a 25 percent score increase for the reading students, indicating that the program achieved its intended purpose.

"How 'Authoring' Programs Help You Create Interactive CAI," by Diane M. Gayeski and David V. Williams, *Training/HRD*, August 1982, pp. 32-35.

Authoring languages and systems allow nonprogrammers to build instructional programs with their computer hardware. They generally help a person communicate with hardware and tell it what information to display, what questions to pose, how to evaluate the responses to those questions, and what part of the program to branch to.

When choosing a system, it is important to first do a thorough needs analysis, followed by careful consideration of equipment compatibility and flexibility. For example, a versatile microcomputer, interface device, and authoring language are needed for production of both computer-assisted instruction and interactive video programs.

The inherent instructional philosophy of each authoring language and system must also be considered, since it will affect, for example, the type of tests that can be constructed or the way wrong answers are treated.

Black, Hawley. **"NABU, Ottawa, Cablevision Home Computer Field Trial."** *Cable Communications*, August 1982, p. 30. A description of a joint venture to offer field trials of banking and shopping services via home computer in Ottawa, Ontario.

Boen, Linda. **"CDI: It Teaches."** *T.H.E. Journal*, September 1982, p. 102. An analysis of a study that compares students in computer-directed instruction (computerized instruction with an interactive video component) with those in a traditional program.

"California Funds $26 Million Statewide Computer Literacy Program." *T.H.E. Journal*, September 1982, pp. 19-21. A report on a statewide program in California to promote technological literacy, engineering education, and training for jobs in an information economy.

Caffarella, Edward P. **"Using an Interactive Computer System to Teach Statistical Methods in Education."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 59-74. A profile of a graduate level educational statistics course at the University of Maine-Orono that uses an interactive computer system.

Connolly, Paul. **"Our Fascination with Electronic Technology is Myopic and Quintessentially American."** *Chronicle of Higher Education*, September 1982, p. 48. A commentary on the pervasiveness of computer technology and the supposed need for computer literacy by the general population.

Dyer, Susan R. and Richard C. Forcier. **"How to Pick Computer Software."** *Instructional Innovator*, September 1982, pp. 38-40. A guide to evaluating computer software based on user needs and objectives.

Gorman, Michael. **"Thinking the Thinkable: A Synergetic Profession."** *American Libraries*, July/August 1982, pp. 473-474. A discussion of online catalogs in libraries.

Holmes, Gly. **"Computer-Assisted Instruction: A Discussion of Some of the Issues for Would-Be Implementors."** *Educational Technology*, September 1982, pp. 7-13. An analysis of the issues to be considered in planning for computer-assisted instruction.

"Inter-campus Electronic Mail Project is Implemented to Link Individual Systems." *Communications News*, September 1982, p. 92. A report on a one-year project that is being sponsored by EDUCOM to link 16 institutions by electronic mail.

Jelden, David L. and Bill R. Brown. **"A Generalized Learner-Controlled Education System."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 3-21. A description of a computer-based system of instruction developed at the University of Northern Colorado to emphasize self-paced education.

Loftus, William J. **"A User's Balance Sheet on Computer-Assisted Learning."** *T.H.E. Journal*, September 1982, pp. 118-123. An examination of the role of computers as a device to assist learners, and the problems involved.

Malone, Joe. **"Use of Personal Computer to Provide Electronic Mail Gaining Acceptance."** *Communications News*, September 1982, pp. 82-83. A review of technological developments that have helped electronic mail systems gain wider acceptance in the private sector.

Newcomb, Steven, and Alfred Bork. **"Plato Makes for Fine Conversation."** *Electronic Education*, September 1982, pp. 12, 14, & 35. The pros and cons of the PLATO educational computing system.

Stibbens, Steve. **"Privacy: A Nagging Problem."** *Infosystems*, August 1982, pp. 49-54. A discussion of the need for privacy safeguards given the massive information storage capacity of today's computers.

Van Hees, E.J.W.M. **"Eduservice—A Computer-Assisted Evaluation System: Some Design Considerations."** *Computers and Education*, Vol. 6 (1982), 311-320. A view of computer-managed learning as an introduction to uses of the computer as an instructional tool.

Webber, Harold. **"Broadband Network Helps Big University Meet the Demand for Information Services."** *Communications News*, August 1982, p. 98. A look at the broadband network operating at Brown University to connect university computer terminals to timesharing computers.

Radio

"Any Business But . . ." *CableVision Plus*, August 2, pp. 14-15. A report on two National Public Radio joint ventures to generate revenue and thereby decrease reliance upon federal funds.

Satellites

"How State and Local Governments Can Utilize Satellite Communications," by David M. Hodgin, *Satellite Communications*, August 1982, pp. 78-84.

The questioning process that led the North Central Telecommunications Consortium (NCTC) to satellite technology is described. NCTC is the group formed when six midwestern states (Illinois, Indiana, Iowa, Michigan, Minnesota, and Wisconsin) pooled their resources and expertise to assess their mutual telecommunications needs. They decided that satellite technology would meet government requirements at the lowest cost.

In most cases, telecommunications networks had been established to satisfy the needs of individual agencies but not the state as a whole. As a result, state budgets have been overburdened with separate voice, data, and video systems, without having a network for information flow among the major cities.

State and county agencies needing such links include those dealing with social services, employment security, vehicle registration, health and emergency services, law enforcement, agricultural extension, library services, public education, etc.

The technology of a TDMA communications satellite transponder, with an earth station at the capital and at each regional activity center, will connect the state and local agencies, as well as interstate and national offices. However, coordinating schedules among users will be a key factor for efficient utilization of the system.

Cook, Bob. **"DBS Eyes Summer Approval From FCC."** *Electronic Media Edition*, June 10, 1982, p. 9. A report on factors that affect the timetable for an TCC ruling on DBS applications.

"FCC Approves DBS Service, Few Regulations Eyed." *TVC*, July 15, 1982, p. 18. A report on interim FCC approval for licensing and operation of DBS.

Freeman, Laurie. **"Small Satellite Dishes Boost Rural TV Service."** *Electronic Media Edition*, July 8, 1982, p. 14. A report on the wealth of small, receive-only satellite dishes in a rural area of New York.

Inglis, Andrew. **"Orbital Spacing, Ku-Band and DBS Emerge as Three Key Satellite Issues."** *Communications News*, September 1982, pp. 28-27. A review of three developments in satellite technology that may compete with cable services in the future.

"Oak Places DBS Bid Before FCC." *Broadcasting*, August 9, 1982, pp. 55-56. A review of Oak Satellite Corp.'s application to the FCC for a three-phase plan to implement DBS.

Radin, Harley W. **"More is Not Better: The Case for Three DBS Service Areas."** *Satellite Communications*, August 1982, pp. 32-36. An analysis of the disagreement among applicants for DBS licenses over the number of satellites necessary in each system to serve consumers cost-effectively.

Rossie, Hohn. **"Satellite Service in Denver."** *Satellite Communications*, September 1982, pp. 42-48. A listing of satellite distribution and video teleconferencing services available in the Denver, Colorado area.

"Satcom Predicts Windfall in Direct Broadcast Market." *Electronic Media Edition*, July 8, 1982, p. 14. A profile of Satcom, a research and development firm for the satellite-to-home receiver system, and its forecast of a lucrative market for DBS services.

Schewe, Regina. **"Local Access to Satellites."** *Satellite Communications*, September 1982, pp. 38-40. An examination of a solution developed in the Washington, D.C. area to the local access and distribution problem.

Silverstein, Jeff. **"Direct Broadcast Satellites: Are They Coming or Going?"** *Video User*, August 1982, p. 4. An explanation of direct broadcast satellites and the array of proposals before the

SOURCESCAN

Books, research reports, and occasional papers with information on how to obtain the publications.

AMCEE Videotape Courses for Engineers, Scientists, and Technical Managers, Association for Media-Based Continuing Education for Engineers, Inc. [225 North Avenue, NW, Atlanta, GA 30332]. 1982/1983. 257 pp. Free.

A catalog of 448 videotape courses in 18 disciplines from 21 engineering universities.

The Aged User and Technology, by Paul A. Kerschner and Kathleen Chelsvig. Available from the Institute for Lifetime Learning, American Association of Retired Persons [1909 K Street, NW, Washington, DC 20049; 202/728-4666]. 1981. 17 pp. Free.

A draft chapter in the upcoming book, *Communications Technology and the Elderly: Issues and Forecasts*, edited by Marie Haug, et al. This paper reports the results of a national survey of older adults' use of new technologies conducted in 1981 (see *TELESCAN*, Vol. 1 Issue 2, November/December 1981).

The CTIC Cablebooks: The Community Medium and A Guide for Local Policy, edited by Nancy Jesuale and Ralph Smith. The Cable Television Information Center [1800 North Kent Street, Suite 1007, Arlington, VA 22209]. 1982. 313 pp. $27 per set, plus $4.50 postage. $15 each, plus $3.50 postage.

A comprehensive guide to cable services, policies, issues, and regulations. Designed for local policy makers, these two volumes provide access to facts and figures which affect municipalities dealing with franchising, refranchising, and franchise administration.

Exploring Community Television, National Federation of Local Cable Programmers. 1982. 36 audiocassettes. $195/set. $6 each.

The recordings of all 36 sessions at the 1982 Annual Conference held in St. Paul, Minnesota. These tapes cover such topics as regulatory issues affecting cable, interface between cable/computers/libraries, planning for academic institutions, and strategies for access programs.

Information Technology and Its Impact on American Education, Office of Technology Assessment, [U.S. Congress, Washington, DC 20510; 202/224-8996]. 1982. 22 pp. Free. Copies of the full report can be purchased from the Superintendent of Documents, U.S. Government Printing Office [Washington, DC 20402]. GPO Stock number 052-003-00888-2.

A summary of an OTA report examining the extent to which information technology could serve American needs for education and training. The report concludes that developments in computer and communications technologies have made a major impact on the U.S. economy. It gives an overview of the full range of new information technologies, the demands that they will make on education and the opportunities to meet those demands. Also identified are specific actions that Congress could take to affect the development, educational applications, and distribution of these technologies.

Report of the Ad Hoc Task Force on Cable Television, Stanford University. Available from Mike Oman, Provost's Office, Stanford University [Stanford, CA 94301; 415/497-3141]. 1982.

A study of the feasibility and future use of cable communications at Stanford University. This report recommends participation in a community cable system that will bring together computers, cable systems, and telephones in a broadband communications network.

Selected Readings in Computer-Based Learning, edited by N.J. Rushby. Kogan Page Limited (London)/Nichols Publishing Company [P.O. Box 96, New York, NY 10024]. 1981. 234 pp. $30.

A collection of papers published in the journal *Programmed Learning & Educational Technology* or published in the

FCC for systems and service.

"SSS Lofts DBS Plan to FCC." *Broadcasting,* August 2, 1982, pp. 50-51. A description of Satellite Syndicated Systems, Inc.'s plans for a DBS system that would offer pay programming.

"The Future's Getting Smaller." *Broadcasting,* August 16, 1982, p. 65. A report on the development of home earth stations that will require much less transponder power.

Teleconferencing

"Conferencing by Satellite—a Selection of Case Studies," *E·ITV,* August 1982, pp. 36-39.

Videoconferencing has been used for meetings, promotions, motivation, seminars, continuing professional education, training, announcements to the press, and speeches. Applications in the future will be employee recruitment, information for businessmen, and student exchanges between continents.

Examples of videoconferencing include the following: (1) a key session of the mid-winter meeting of the American Library Association, uplinked to Westar I by the Public Service Satellite Consortium and downlinked by the Appalachian Community Service Network; (2) a talk show format conference co-sponsored by the Ohio University Telecommunications Center and the Council for the Advancement of Experiential Learning (CAEL) for CAEL members and guests at ten PBS stations; (3) sales training at Hewlett Packard; (4) product introduction by the Firestone Tire and Rubber Co. uplinked to Westar III and produced by VideoNet; (5) a closed-circuit continuing education presentation sponsored by Johnson & Johnson at the Hospital for Special Surgery in New York City; (6) bankruptcy seminars conducted by the American Law Institute/American Bar Association (ALI/ABA); (7) a nine-city forum on revitalization by the National Center for Neighborhood Enterprise; (8) an investment seminar by Merrill Lynch; and (9) a speech at the Southeastern Telecommunications Association (SETA).

Among the projects still in the development stage are a job fair in the Silicon Valley sponsored by World Wide Satellite Services of Palo Alto, California, and a language/culture exchange sponsored by the National Committee for Internationalizing Education through Satellites, Inc. (NCIES).

"Allied Van Moves Information Quickly Via Videoconferencing." *Communications News,* August 1982, p. 33. A profile of a videoconference which was sponsored by Allied Van Lines and originated from Chicago's public television station.

"An Average Meeting Costs $7.48 on Audio Bridge." *Telcoms,* August/September 1982, pp. 4-5. A case study of the Virginia Department of Telecommunications teleconferencing system which offers audio and video options.

Baird, Marcia and Mavis Monson. **"How to Tackle Training for Teleconference Users."** *E·ITV,* August 1982, pp. 44-50. A discussion of an approach to designing training programs for teleconferencing users.

Bodie, Eileen. **"This is London—Via Videoconference."** *E·ITV,* August 1982, pp. 31-33. A profile of an international videoconference between the Chicago Mercantile Exchange and the International Monetary Market in London.

Bond, Al. **"Producing An In-House Videoconference."** *Video User,* June/July 1982, pp. 19-20. A guide to coordinating your own videoconference.

Broderick, Joseph. **"The Problems of Corporate Conferencing in Latin America."** *Satellite Communications,* August 1982, pp. 72-77. A case study of barriers to videoconferencing links between U.S. corporations and their subsidiaries in Latin American countries.

Eliash, Dina. **"Electronic Meetings Are Here to Stay."** *Meetings and Conventions,* August 1982, pp. 38-39; 73-82. An overview of teleconferencing and its effect on the meetings and conventions industry, with case studies of several applications already in use.

Ellis, G. Barry. **"Telidon Holds Promise as an Audio Enhancer."** *Telecoms,* August/September 1982, p. 2. A profile of a University of Calgary (Alberta, Canada) experiment to add a visual component to its audio-only teleconferencing system through videotext.

Patterson, Robert M. **"The Anatomy of a Portable TVRO Network."** *E·ITV,* August 1982, pp. 40-44. A description of a videoconference at 139 remote sites using transportable satellite receive-only downlink.

"Press Conferencing Via Videoconferencing." *Broadcasting,* August 23, 1982, pp. 56-57. An announcement of a videoconferencing service that produces press conferences.

Rathbun, Robert. **"Aetna Developig Nationwide Satellite Net."** *Video User,* August 1982, p. 29. A report on Aetna Life & Casualty's investment in a teleconferencing system that links headquarters with branch offices.

"Teleconferencing Report." *E·ITV,* September 1982, pp. 26-30. A review of current developments in teleconferencing, including case studies of audio, video, and slow-scan applications.

Thomas, Cinda and Willard Thomas. **"Investment Trends in Teleconferencing."** *E·ITV,* August 1982, pp. 34-35. A look at the increasing rate of investment in videoconferencing facilities and services and its impact on the industry.

"Videoconferencing Unit Set." *Electronic Media Edition,* August 2, 1982, p. 2. A report on the establishment of a Western Union subsidiary to market videoconferences.

"Video Teleconferencing: Beyond the Gimmicks." *Telecommunications,* August 1982, p. 27. A look at American

proceedings of the Associations for Educational Training and Technology. This volume surveys current practice in the United Kingdom and abroad, problems of providing computer-based learning systems, and discusses specific applications in a variety of disciplines. Emphasis is on secondary and higher education.

Telecommunications and Developmentally Disabled People: Evaluations of Audio Conferencing, Personal Computers, Computer Conferencing, and Electronic Mail, by Robert Johansen, Barbara McNeal, and Michael Nyhan. Institute for the Future [2740 Sand Hill Road, Menlo Park, CA 94025]. 1981. 235 pp.

An evaluation report of a study conducted by the Alternate Media Center at New York University's School of Arts. This book demonstrates effective, affordable, and accessible uses of telecommunications to benefit developmentally disabled children and adults. Project conclusions and policy recommendations are included for decision makers within human-service funding agencies who are responsible for determining whether and how to implement these telecommunications efforts.

Teletext and Videotext in the United States, John Tydeman, et al. McGraw-Hill [1220 Avenue of the Americas, New York, NY 10020]. 1982. 300 pp. $30.

An analysis of public policy issues and the broad societal impacts of teletext and videotext. This report includes projections and suggestions for the expansion of this technology for educational uses.

Satellite Company's Videoconferencing system.

Telephone

"Continuing Education via Electronic Blackboard," by Sammy R. Danna, *E-ITV*, September 1982, pp. 64-69.

Electronic blackboards transmit graphics over a distance by using pressure-sensitive blackboards that convert drawings and formulae into digital information carried over telephone lines. They are easy for faculty to use and provide effective instruction.

At the University of Illinois (U of I) at Urbana-Champaign, a program has been developed whereby the electronic blackboard is used for economic production of videotaped courses that support continuing professional education. These programs combine the output of the blackboards with conventional, live TV. After making a pilot tape of an engineering professor, and resolving many of the technical problems, faculty accepted the electronic blackboard as a successful delivery system.

The development needs of such a program include: synchronization of Gemini 100 blackboards to a videotape production facility, room arrangements and environmental requirements, lighting, videotape production console, multiple recording capacity, and audio level requirements.

Primary advantages of the Gemini blackboard setup include the following: (1) allows instruction to take place at the convenience of the learner; (2) makes good use of teaching resources, especially faculty time; (3) is economical (as low as $1.97 per hour of student instruction); and (4) allows clear, high-resolution presentation of graphics, particularly important in engineering instruction.

Besides developing four to six conventional courses each semester, current production efforts concentrate on videotaping a professional engineering course covering a broad range of timely topics. Additional distribution of the credit and non-credit U of I courses is made through the Association for Media-Based Continuing Education for Engineers.

"Evaluating Educational Technology: The Old Shoe," by G. Ronald Christopher, *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 93-98.

The telephone—often considered the "old shoe" of technology—is shown to be an effective, extensive, and enduring educational technology delivery method. The "three E's," as identified by Anadam and Kelly, are the criteria by which to evaluate technology used in education.

Two recent evaluations conducted by the Air Force Institute of Technology involving four different courses, 12 separate studies, and 1,622 students found no statistically significant differences in academic achievement between students taught in the resident face-to-face mode and those receiving instruction remotely through a telephone system that incorporated an electronic blackboard. Other studies have shown similar results.

Enough examples exist to prove that the use of the telephone as an educational device is widespread. Thirty-one telephonic delivery systems are identified in a recent survey, excluding national, regional, or local systems. The leader in academe is the University of Wisconsin-Extension, which delivers continuing education through a statewide system. Other networks are operated by the University of Illinois, University of Minnesota, Stephens College, University of Texas, the Air Force Institute of Technology, Montgomery County (Maryland), University of Missouri, University of Montana, Open University (England), Université de Quebec, University of Lund (Sweden), Ohio Medical Education Network (OMEN), and the Oklahoma Area Medical Continuing Education Teleconference Network.

The endurance of telephonic educational networks has also been proven—e.g., Stephens College, 23 years. Contributing factors to the secure future of the telephone as an educational technology are cost, faculty acceptance, and availability.

Hudson, Larry and David Bunting. **"Telenetwork System: A Viable Alternative for Delivering Distant Instruction."** *Educational Technology*, August 1982, pp. 17-19. A description of the University of Iowa's use of a telephone network to provide instruction for distance learners.

Copy Delivery Systems

Bernthal, Mark. **"Why Edutainment Works."** *Video Systems*, July 1982, pp. 58-59. A discussion of combining educational/informational subject matter with an entertaining format to capture viewer attention in nonbroadcast business productions.

Drucker, Robert. **"The Videodisc for Training and Education."** *Videodisc News*, July/August 1982, pp. 14-17. An overview of the Robert Drucker & Company experience in producing videodiscs for business and industry training.

Fedale, Scott V. **"Interactive Video in the Pacific Northwest."** *T.H.E. Journal*, September 1982, pp. 124-126. A survey of interactive video training and instruction using videotape in the Pacific Northwest.

Haynes, T.R. **"Video Production Technology in Australian Higher Education."** *Journal of Educational Television*, Vol. 8 (1982), 118-126. A report on four series of video-tape programs produced for instruction at the University of Adelaide (Australia).

Porter, Della. **"Videodiscs, Videocassettes, and Film Study."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 83-91. A description of advances in video equipment that have implications for the delivery of instruction in film study.

Shwechuk, Bob **"Scoring Points with Employees."** *Video Systems*, July 1982, pp. 60-61. A look at an instructional program for truck lift operators that uses a game show format.

"Warner Steps Up Public Service." *TVC*, September 1, 1982, p. 20. A report on Warner Amex Cable Communications' joint venture with Network for Learning (NY) to develop video courses that will be distributed nationally to public broadcasting stations.

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MACROSCAN

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Marketing Service For ITV Established

A project that started as a regional experiment has now become a national service. The Educational Program Service (EPS) is a national marketing service for the distribution of instructional television (ITV) programming. A system-owned co-op established for the mutual benefit of ITV producers and users, EPS' policies, prices, and royalties are directed by the producers and users who benefit from the service.

The establishment of the service is the culmination of a two-year experiment in ITV marketing and distribution by the Southern Educational Communications Association Center for Instructional Communications. This study proved that quality programs can be made available to users at lower rates, and at the same time the producer can receive more royalties from the sale of his product. Initially, EPS will be distributing seven series from three major ITV producers who have a history of providing quality instructional television materials: the Maryland State Department of Education, the Mississippi Authority for ETV and the South Carolina Department of Education.

EPS reflects the continuing commitment and leadership of broadcasters and educators in the southern United States to maintain and strengthen instructional communications' role in the learning process. For more information, contact Pete Pansari, director, EPS, Southern Educational Communications Association, P.O. Box 5966, Columbia, SC 29250; (803) 799-5517.

U. of Colorado Offers "Online" Course Via Computer Teleconferencing

This fall at the University of Colorado students can take a course by going no further than from their sofa to the communications terminal. The first 'online' course, called Office Information Systems, discusses the implications of the 'office of the future' on corporate management.

Unlike computer-programmed instruction, computer teleconferencing is a new method for linking people together rather than linking people to a computer database. The specific system for linking students together with the instructor is Matrix Transaction Exchange—a computer teleconferencing software system developed by Cross Information Company. MATRIX provides electronic mail for teacher-to-student and student-to-student communications, a bulletin board for posting class notices and homework, classroom areas for receiving class lectures, and memo areas for creating homework and student participation.

Some advantages of computer teleconferencing over other educational technologies (audio and video) are: No time restrictions, no geographical restrictions, self-documenting and filing, and self-pacing and training.

Students can take this course at their convenience, using computer teleconferencing for courses that conflict with their work or other class schedules. Colleges will use computer teleconferencing to supplement existing courses as a new source of revenue and expanded worldwide "classroom."

For further details, contact Thomas Cross, Cross Information Company, 934 Pearl, Suite B, Boulder, CO 80302; (302) 499-8888.

New Jersey Institute Opens Computer Center

New Jersey Institute of Technology (NJIT) formally dedicated its new Pre-College Computer Center recently. Believed to be the first operation of its kind established on a university campus solely for pre-college programs, the Center is used by students and teachers who come to NJIT to participate in its many academic and research programs for area high schools and junior high schools.

The computer center was founded through a grant of $27,000 from The Turrell Fund, a foundation created to help youngsters in Northeast urban areas, particularly in Essex County, and $31,000 worth of equipment donated by Digital Equipment Corporation (DEC). The center contains 10 DEC microcomputers, each equipped with a floppy disc drive and a dot matrix printer.

Pre-college programs at NJIT began in the summer of 1971 with 40 inner-city high school students coming to the campus to study urban engineering under a grant from the National Science Foundation (NSF). Since that time, pre-college activities have expanded to include summer programs, academic year programs, and workshops for teachers, all given under the auspices of the NJIT Center for Pre-College Programs. The Center's annual $400,000 budget is now met through contributions by industry and foundations, as well as NSF and the U.S. Department of Education.

Before the new computers were obtained, computer science instruction was given at NJIT's computing center, where pre-college students had to compete for time on the system with college students, faculty members, and administrative programs. The limited availability of keypunch time and the relatively long turnaround time curtailed the number and diversity of topics that could be covered.

The new microcomputers offer an easily accessible system that provides immediate contact with the computer and the observation of each step in the execution of a program. The microcomputers may also be used for problem solving throughout the year.

More information is available from New Jersey Institute of Technology, 323 High St., Newark, NJ 07102.

Videodisc Conference Emphasizes Interactive Uses

The Institute for Graphic Communication, Inc., a group of scientists, inventors, legal, financial, and marketing specialists in fields relating to visual communications, sponsored a three-day conference on applications of nonlinear videodisc in July 1982. Emphasizing interactive uses, the conference covered video training, education, publishing, games, catalog sales, and uses of still frame audio.

Experts from companies and organizations committed to the technology led the discussions which offered detailed insights into several new developments and reviewed the recent progress of established systems for both optical and video-based videodiscs.

Other conferences focusing on a variety of topics involving visual communications systems are scheduled through the end of the year. For more information, contact the Institute for Graphic Communication, 375 Commonwealth Avenue, Boston, MA 02115; 617/267-9425.

Videodisc Conference on Military Applications

In cooperation with the Naval Underwater Systems Center, the Society for

Applied Learning Technology sponsored a conference on the military applications of videodiscs. Featuring descriptions of ongoing uses of this technology to supplement traditional education and training methods, program speakers used technical presentations with illustrations and actual demonstrations. Proposed and potential future applications required by the military and government agencies were also discussed.

Three prior conferences on videodisc technology have been offered by the Society, and several others are scheduled in upcoming months. Address inquiries to the Society of Applied Learning Technology, 50 Culpepper Street, Warrenton, VA 22186; 703/347-0055.

Periodicals

A complete list of all the publications we review regularly, plus publishers' names and addresses is available to *TELESCAN subscribers upon request.* In each issue we will list the titles and publishers of periodicals which do not appear on our publications list, but which have been included in the current issue of *TELESCAN.*

AAHE
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Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

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Carol Brown Eilber
Consultant
Robert Fullilove
Fund for the Improvement of Postsecondary Education
Jinny Goldstein
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Michael Goldstein
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Center Launches Pilot Phase of New Inquiry Service

This month, the Center for Learning and Telecommunications begins operation of a six-month pilot phase of a new, computer-based inquiry service. We've cross-referenced the general literature and current events featured in *TELESCAN*, along with the program-specific information in *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs.* In addition, we've accumulated a vast amount of information on books, research documents, programs, and funding sources which is too voluminous to print in bimonthly issues of *TELESCAN*. All of these resources now are combined to provide you with a comprehensive database of projects, periodicals, and people involved in the delivery of postsecondary education and training. From January through June 1983, *TELESCAN* subscribers have an opportunity to make unlimited inquiries of this service by telephone.

A sample question demonstrates how the service works: A director of a local higher education council asks, "Where have clusters of higher education institutions that program and operate broadcast or cable television channels been identified?" The question is recorded and a computer search is made for broadcast and cable television consortia. A search through available data would yield the following:

- citations of articles, books, and other resource documents relating to television consortia;
- materials and proceedings from conferences, workshops, and seminars on the topic;
- names of contact persons at institutions, as well as national, state, and local organizations involved with consortia;
- names of resource persons with experience in managing a broadcast or cable facility at an institution.

After completing the computer search, Center staff review the data printout (with complete details on how resources may be obtained, including addresses and phone numbers of contact people), make notations of which items are most useful to the particular user, and add other relevant information from the staff's "corporate knowledge" of significant new developments. Users receive the computer printout plus any other information resulting from the staff review.

This process will surface new items which are then put into the database for future referral. Thus, this pilot project enables the Center to develop the inquiry service in response to the types of questions received. Both the underlying data and the procedures for answering inquiries will evolve as more users access the system. As we observe the volume and nature of calls, we also will make adjustments in the computer program, so initially there will be some lag time in receiving responses. However, we are aiming for a turnaround time of one week from the time an inquiry is made until the response is mailed out from this office.

This very special opportunity is extended to *TELESCAN* subscribers to assist us in designing a system that is most useful to those segments of the postsecondary education and communications communities interested in the delivery of adult instruction. Once this pilot period is ended with positive results, the inquiry service will be offered to the general public for a separate user-fee.

The hours of operation beginning January 4, 1983, are Tuesdays and Wednesdays, 1:30 to 4:30 p.m. (EST). Calls will be handled during these hours at 202/223-3092 and 202/223-3093 only. *Please do not call AAHE for access to the inquiry service.* You must be a current subscriber to *TELESCAN* to be eligible for free, unlimited access to the inquiry service.

The Center for Learning and Telecommunications is dedicated to serving you with the most accurate, complete, and timely information available on telecommunications and higher education. The full participation of *TELESCAN* subscribers in this exciting new service ensures its success, and that can only mean ready access to more and better information for you on the variety of applications of new technologies for adult learning.

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Applications of new technologies to be demonstrated at AAHE National Conference in March . . . . **page 2**

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Literature review of 115 articles updates developments in technologies . . . . **page 3**

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Educational television provides free teletext service to hearing impaired . . . . **page 10**

Computer-based education center receives national award . . . . . . **page 10**

University physicist designs instructional videodiscs . . . . . . **page 10**

The Center is a program of the American Association for Higher Education One Dupont Circle Washington, DC

CAPITOLSCAN

Washington-based, national initiatives involving uses of telecommunications in higher education.

Colleges and Public Television Stations Form Partnerships Through Adult Learning Service

This fall, more than 35,000 students are enrolled in television courses offered by colleges and public television stations through the PBS Adult Learning Service, a projected 37% increase over last fall's enrollment. More than 400 colleges and universities in partnership with 218 stations in 47 states are now offering over 950 television courses, representing a growth of about 20% in the number of class offerings between last spring and this fall. Also as of this fall, over 600 institutions will have participated in the service.

Preliminary figures for the upcoming winter-spring 1983 term indicate continuing expansion of the Adult Learning Service, with more than 30 new colleges expected to join the service and an increase in the projected number of course offerings for winter-spring of nearly 15%.

Behind these statistics are the partnerships colleges and public television stations have developed across the country. During the PBS teleconference "Making The Right Connections," held November 2, representatives of colleges and stations described some of these partnerships and shared ideas and experiences with their colleagues at viewing sites around the country:

- WGBH and the Massachusetts College of the Air, a consortium of Boston area colleges, jointly have developed a schedule of television courses for the participating colleges and have implemented a promotion campaign to encourage enrollment.
- A new initiative underway in Atlanta between Dekalb College and WETV was demonstrated on videotape. In its very first term, that college enrolled 250 students in the television courses. At the end of the term, an evaluation found that attrition rates were essentially the same for television courses as for on-campus courses on the same subject when taught by the same faculty. Furthermore, students reported that the television courses were as demanding as traditional courses. The college also is working with a labor union and an airline based in Atlanta to develop schedules of television courses to meet the needs of their employees.
- The West Virginia Higher Education Consortium is a model of statewide college/station cooperation (see *TELESCAN*, Issue 4, March/April 1982). The consortium consists of three public television stations and 17 colleges and receives funding from the State Board of Regents. Since 1977 it has enrolled 14,000 credit students in television courses. WWVU recently created an instructional package, entitled "A New Course of Action," to introduce faculty to television courses. The 15-minute tape and 14-page booklet are available for a fee from Kathy Channell, Adult Learning Specialist, WWVU-TV, 191 Scott Ave., Morgantown, WV 26507.
- Faculty and administrators from Jefferson State Junior College and the University of Alabama at Birmingham discussed via tape their informal statewide consortium of colleges and the Alabama Public Television Network. Though the colleges differ greatly in size, location, and mission, they cooperatively select the courses to be offered each term.

Another important part of the PBS teleconference was the announcement of the summer and fall 1983 Adult Learning schedules. To obtain further information about the Adult Learning Service, contact the adult learning liaison at your local PTV station or call the service at 202/488-5360.

Future Priorities for Technology and Education

The steady acceleration of activity in electronic learning prompted the Fund for the Improvement of Postsecondary Education (FIPSE) to bring together a group of experts to talk about future priorities for uses of these technologies, and what problems and promises they pose for educational improvement.

The discussants stressed the need for more educational courseware. They agreed that a cooperative process that would link educators, technology designers, and publishers in software development could ensure high quality programs.

The group emphasized that educators need to use better what already exists. In television, and increasingly so with computer software, because of complicated issues concerning rights—broadcast and reuse—materials already developed are not widely used. Better clearinghouse and collaborative arrangements and more flexible rights agreements would make it easier for educators to know about existing materials and adapt them appropriately.

The two-day discussion concluded that attention in the postsecondary world should be turned on learning potential and problems rather than on the hardware itself. FIPSE is digesting the recommendations that came out of the meeting with the intention of mounting a small focused grants competition directed toward the next steps in improved use of technology for learning. For more information, contact Hilda Moskowitz, FIPSE, Room 3100, 7th & D Streets SW, Washington, DC 20024.

Technology Tutorials Feature of Higher Education National Conference

The 1983 National Conference of the American Association for Higher Education, March 27-30, will explore the impact of the technological revolution on the nation's colleges and universities. Sessions and workshops will address issues ranging from the immediate applications of new information technologies in teaching and management to fundamental shifts in college roles and functions brought about by the change from print to electronic communication, and the demands of a high technology economy.

A unique feature of this year's conference will be half-hour, small group tutorials on applications of 20 of the latest information technologies. These tutorials, arranged for AAHE by Carolyn Landis of EDUCOM, will cover such topics as:

- *Microcomputers and Terminals and Professional Work Stations.* Daniel Updegrove, EDUCOM, will explain how standalone microcomputers, remote terminals, and networked micros are being increasingly used as faculty and administrative work stations. Costs, benefits, and case studies (Iowa, Stanford, and Carnegie-Mellon) will be discussed.
- *Electronic Mail and Mailnet.* Daniel Oberst, EDUNET, will demonstrate several electronic mail systems, including one that connects internal mail systems to a multi-campus network.
- *Decision Making with Microcomputers.* Andrew Lupton, Academy for Educational Development, will highlight the University of Pennsylvania experience in demonstrating how university policy makers are using micros for decision support.
- *Instructing with Microcomputers.*

Russell Burris, University of Minnesota, will demonstrate how computer-based exercises are used in legal education at the Center for Computer-Based Legal Instruction.

- *Multi-user Microcomputer.* Allen Gray, Loyola Marymount University, will demonstrate software used in teaching business courses. Six users can timeshare on one microcomputer that serves as host.
- *Videodisc for Library Use.* Peter Schipma, Information Sciences, IIT Research Institute, will demonstrate a functioning system for storing and retrieving the equivalent of 20,000 pages of printed material on a dual-sided videodisc.
- *French Literature Database.* Joel Mambretti, University of Chicago, will illustrate the use of computing in the humanities by demonstrating a database containing 150 million words of French text covering three centuries.

For further information about the tutorials and other features of the conference program, contact Russell Edgerton, president, AAHE, One Dupont Circle, Suite 600, Washington, DC 20036; 202/293-6440.

Plans for Satellite Network Move Ahead

Plans for the Campus Conference Network, a project of Services by Satellite, Inc. (a subsidiary of the Public Service Satellite Consortium) are moving along on schedule.

Over 900 colleges had an opportunity to respond to a "preliminary indication of interest" mailing that went to accredited institutions in 60 priority markets. Based on early responses, over 200 institutions asked for the formal bid solicitation package that was mailed in December. Included in that mailing was a model affiliation agreement, projections of income for affiliates, specifications for the earth station, a description of what each campus will be expected to have available by way of equipment and personnel, and the bid form itself.

According to Elizabeth L. Young, president of SatServ, "We expect to install earth stations for our first affiliates in spring 1983, at which time the network will become operational. The availability of this network will not only generate income for the affiliated institutions but will give them access to many sources of programming already available via existing communications satellites."

For more information about the Campus Conference Network, contact Elizabeth L. Young, president, Services by Satellite, Inc., 1660 L St. NW, Washington, DC 20036; 202/331-1960.

PRINTSCAN

Abstracts and bibliographies of articles appearing in periodicals from September 15 through November 15.

Innovative Concepts

"Variety Adds Effectiveness (and Spice)," by Jan Baltzer, *Community and Junior College Journal,* October 1982, pp. 26-42.

Rio Salado Community College, a non-campus college in Arizona, responds to the needs of distance learners with classroom-based courses in community facilities and business sites using telecommunications systems. Increasing demands for specialized courseware, convenience, and total interaction that is not possible through broadcast television or radio are reasons for the college's expansion into other delivery systems.

The college has established a Department of Instructional Technology and Design that has five new telecommunications delivery systems: copy delivery systems of videocassette and audiocassette, cable television, print-based (correspondence) courses, audio teleconferencing, and slow scan video.

Among the innovative uses of these technologies are the placement of video- and audiocassettes of traditional broadcast television and radio courses in public libraries; the evaluation of training materials used by industry for employee credit courses; production of two live cable television courses per semester beginning in the spring of 1983; and establishment of a countywide "Meet-Me" audio teleconferencing system to be operational in spring 1983.

Keys to the success of the Rio Salado program are administrative support, faculty involvement, quality software, and an operational support system. Rio Salado faculty have been involved in developing new courses and reviewing preproduced courseware. A team approach (faculty/instructional designer/media specialist/operations specialist) allows maximum participation by faculty.

In addition, the community college has a course operations staff to help both students and faculty. It uses an Apple II for demographic analysis of students, faculty and course evaluations, and test scoring. The institution has a commitment to media literacy, diversity, and cooperative relationships with other institutions in the community to reach distance learners.

Berman, Audrey. **"The Legal System in the Video Age."** *Channels,* September/October 1982, pp. 51-52. A report on the use of videotapes and closed-circuit television in the judicial system.

Schiller, Herbert. **"Information: America's New Global Empire."** *Channels,* September/October 1982, pp. 30-33. A discussion of U.S. information policy, and foreign opposition to its doctrine of "the free flow of information" that would allow the imposition of U.S. laws upon other countries to control the development and use of new technologies.

Legal/Regulatory Issues

Behrens, Steve. **"High Court Hears Plea on TV for Deaf."** *Current,* October 15, 1982, pp. 1, 4. An examination of a case before the Supreme Court that would require closed-captioning by public broadcasters for hearing-impaired viewers under Section 504 of the Rehabilitation Act of 1973 prohibiting discrimination against handicapped persons by federally aided programs.

Gladstone, Brooke. **Facilities Grants Help Launch State Radio Net, Rural LPTV."** *Current,* October 15, 1982, pp. 1, 7. An overview of grant awards made by the National Telecommunications and Information Administration's Public Telecommunications Facilities Program.

"Green Light for Cable Copyright." *Broadcasting,* September 29, 1982, pp. 29-30. A report on compromise agreements reached by parties involved in drafting the cable copyright bill.

Hill, Arthur. **"New Copyright Rates: Who Reaps the Profits?"** *TVC,* October 1, 1982, pp. 70-72. A discussion of the revised fee structure to be set by the Copyright Royalty Tribunal.

"House Commerce Committee Passes Cable Copyright Bill." *Broadcasting,* September 17, 1982, p. 36. A review of procedures and events leading to the passage of the copyright cable bill by a House committee.

Lawrence, John S. and Bernard Timberg. **"The Kastenmeier Committee Guidelines on Fair Use in Off-Air Taping: Not the Last Word."** *AFI Education Newsletter,* September/October 1982, pp. 2-3. A commentary on the continuing difficulties posed by congressional guidelines for "fair use" in off-air taping.

Richardson, Alan and Thomas Schwartz. **"What Media Managers Should Know About Copyrights."** *E·ITV*, October 1982, pp. 74-78. A guide to the provisions of the Copyright Act of 1976 in terms and situations that would apply to media managers and producers.

"Sony's Defense: First Amendment." *Broadcasting*, November 8, 1982, p. 89. A review of Sony Corp.'s argument of First Amendment protection in the videorecording case before the Supreme Court.

Swartz, Herbert. **"Zinger in the Highest Court."** *CableVision Plus*, November 1, 1982, pp. 14-15. An examination of the issues involved in the Supreme Court's review of the home videotape recording case.

Broadcast Television

"After 20 Years: Still 'Far from the Zenith,' " by Jim Robertson, *Current*, September 30, 1982, p. 5.

Many of the pioneers of educational television, when interviewed about the field's development, have offered insights into its progress to date. Among those providing opinions in this article are Norman Cousins, Jack McBride, Leonard Marks, Newton Minow, Bill Harley, and Rosel Hyde.

Many expressed regret at the limited tie of public television (PTV) to education. Although PTV is "on the right track," it hasn't fulfilled its potential, hasn't convinced the "traditionalists, academicians, and educational administrators" of the real potential.

Funding is a source of concern to other observers, especially the consideration of advertising as a source of revenue. One opinion is that the differences between public and commercial television have eroded, and that the aim for mass audiences is the antithesis of what PTV stood for—pushing people to grow.

Leadership and future directions are also cited as areas of concern. Part of the worry is related to the effect cable television and home entertainment centers will have on PTV, particularly in the area of cultural programming. For the present, however, there remains the problem of attracting enough quality programming and the financing for it.

Battison, John H. **"Chinese Television Circa 1981."** *Broadcast Engineering*, September 1982, pp. 104-13. A profile of the Beijing Broadcasting Institute, which is the sole source of broadcast professionals for the Central Broadcasting Administration of China.

Behrens, Steve. **"Adult Learning Service Enrollment Jumps 37%."** *Current*, November 12, 1982, pp. 1, 4. A report on the growth of college, station, and student participation in telecourses distributed by the PBS Adult Learning Service.

Behrens, Steve. **"LPTV: All Network or Highly Localized?"** *Current*, October 15, 1982, p. 5. A review of the status of and issues involved in licensing low-power stations, as presented at the LPTV East Conference in Washington, DC.

Behrens, Steve. **"Pay-TV, ITFS Meet Quietly; FCC Waits."** *Current*, November 12, 1982, pp. 1, 8. An overview of developments that may lead to a compromise between public broadcasters and commercial entities for use of ITFS frequencies.

Behrens, Steve, **"248-Site LPTV Net Crucial to Alaska Schools."** *Current*, October 15, 1982, p. 5. An overview of the Learn Alaska network which employs 100 low-power transmitters to deliver instruction throughout the state.

Brock, Dee. **"First Efforts Encourage PBS."** *Community and Junior College Journal*, October 1982, pp. 32-34. An examination of the Public Broadcasting Service's Adult Learning Service, its success in creating local partnerships between stations and colleges, and its drawbacks.

Danna, Sammy R. **"ITV at Mercy Hospital—Healthy and Growing."** *E·ITV*, November 1982, pp. 62-65. A look at the development and growth of ITV programming for training and patient education at Mercy Hospital in Chicago.

Danna, Sammy R. **"Loyola's New Department for Satellite Production."** *E·ITV*, October 1982, pp. 70-73. A profile of the development of an Office of Telecommunications at Loyola University to investigate new technologies affecting education.

"Educators Oppose Suggested Changes for Instructional TV." *University of California Bulletin*, September 17, 1982, p. 18. A view of the threat posed to institutions by proposals to reallocate ITFS channels from educational to commercial use.

"Instructional TV is Used by IIT for Students in Different Areas." *Communications News*, November 1982, p. 11. A report on an Illinois Institute of Technology program that offers continuing education via television to workers at their place of employment.

"KQED—San Francisco's Enterprising Instructional Services Dept." *The Videoplay Report*, November 8, 1982, pp. 1-5. A look at a public television station's commitment to instructional programming and entrepreneurial approach to budget cuts.

"Low Power Television Progress Dominates NTA Convention." *Broadcasting*, November 8, 1982, pp. 80-81. A report on discussions at the National Translators Association convention with emphasis on the progress of LPTV applications at the FCC.

Mirkin, Barry. **"Vo-Tech TV OK."** *Community and Junior College Journal*, October 1982, pp. 36-37. A discussion of television courses at the Wisconsin Vocational, Technical and Adult Education system and the role of instructors in this effort.

"1982's Buyer's Guide." *Broadcast Engineering*, September 1982, pp. 129-86. A directory of broadcasting equipment and services for engineers, managers, and purchasing agents.

Oglesby, Wendy. **"12 Nationals Will Study Technology in Education."** *Education Week*, November 3, 1982, p. 6. A report on a three-year study for UNESCO involving international educators in a review of educational technology.

Parnell, Dale. **"An Interview with Edward Pfister."** *Community and Junior College Journal*, October 1982, pp. 11, 14-15, 48. An interview with the president of the Corporation for Public Broadcasting on its role in adult education.

Press, Leonard O. **"ETV Jamaican Style—With Help from Friends."** *SECA Signal*, November 1982, pp. 3, 5. A description of educational broadcasting in Jamaica.

Purdy, Leslie. **"Here's How On-Switch Turns On Students, Too."** *Community and Junior College Journal*, October 1982, pp. 20-23, 43. A guide to assessment and evaluation when selecting telecourses.

"Quello Tells NTA Help Is On the Way." *Broadcasting*, November 8, 1982, pp. 81-82. A review of remarks by an FCC commissioner on the slow but steady progress of low-power television licensing.

Sapper, Neil. **"For a Graybeard: Things Change."** *Community and Junior College Journal*, October 1982, pp. 24-25, 35. An examination of instructional television at Amarillo College in Texas.

"64 Grantees Share Nearly $14M for Educational/Public Television Facilities and Planning." *ETV Newsletter*, November 1, 1982, pp. 1-5. A listing of television-related grants awarded in 1982 by NTIA including names, addresses, grant amounts, and descriptions of how funds will be used.

Smith, Richard W. **"If Show Biz Is No Biz, What Is?"** *Community and Junior College Journal*, October 1982, pp. 19-20. A commentary on the marginal success and effectiveness of telecourses in the educational marketplace.

Steinke, Ralph G. and Daniel J. Griffin. **"Doing 'Distance Learning'? Do Student Surveys Too."** *E·ITV*, November 1982, pp. 44, 48-49. A review of a survey instrument developed at Waubonsee Community College in Illinois to assess student characteristics and needs.

Zigerell, James. **"Video Vitality: Consortium Has It."** *Community and Junior College Journal*, October 1982, pp. 16-18. A report on the growth and expansion of the Instructional Telecommunications Consortium, an agency organized to promote the uses of telecommunications in postsecondary education.

Cable Television

"Cable TV Programmers Find Problems Amid Fast Growth," by Tony Schwartz, *New York Times*, September 28, 1982, pp. A1, C22.

Although the cable industry has seen fast growth, problems have surfaced, including both programming and financial ones. Examples of the magnitude of the problems include the decision by CBS Cable (a network oriented to the performing arts) to fold, the annoucement by Westinghouse and the Disney organization to dissolve a joint venture on the Disney channel, and the attempt by three motion picture studios to become partners in competing against Home Box Office.

Analysts suggest that the industry as a whole is strong but that "there is risk to its parts." Advertising income is one issue. In a recessionary period, advertisers are more likely to stick with network television; cable television is still more of an unknown quantity. However, most experts expect the advertising market to expand rapidly as the subscriber base grows.

Besides advertising, programming has become a problem of sorts. Feature films continue to be popular, but there are few such films available. Sports programmers encounter the dilemma that popular sports such as basketball and football are costly and the low-cost events such as rodeo and repeats are not as marketable. Arts programming has been critically acclaimed by reviewers but has not attracted advertisers. The Rockefeller Center-RCA venture, Entertaiment Channel, has potential but requires huge capital investment.

There is no way cable programmers can be sure of what viewers are willing to pay for service, but networks that appeal to large, clearly defined audiences and that invest the least capital will be the ones to survive.

"The College/Cable Connection," by Lynne Schafer Gross, *E·ITV*, October 1982, pp. 86-88.

Educators and cable companies are finding it beneficial to work cooperatively. One example is California State University-Fullerton, which has recently entered a cooperative relationship involving four different entities within the university and two cable companies.

As a result of university involvement in the Storer and Group W cable franchising process in Fullerton and nearby Anaheim, the university was given channel space and $500,000 worth of equipment: production equipment for the Communications and Theater Departments; a character generator for the Public Relations Department to program announcements about university activities; and playback equipment for Learning Resources Services to feed programming directly to the cable channel.

During the first year of operation students produced about 75 hours of programming, divided into six series: "Reel People," interviews with student and professional filmmakers; "University Spotlight," features about people and campus events; "Titan Talk," interviews with university coaches and athletes, along with game highlights; "Orange County Connection," local community events coverage; "CSUF Sports," athletic events taped in their entirety; and "Career Wise," interviews with people who have made midcareer changes.

Some of the programs are produced in conjunction with community groups. The equipment is still owned by the cable companies, and cablecasting is currently being done from the Group W facilities. Students are paid minimum wage. The intricate cooperative relationship among these six entities is seen as a major strength of the overall system, building cooperation and communication between the college and the cable operators.

Ball, Adrian. **"Major UK Developments on Eve of Government Cable TV Report."** *CableAge*, October 4, 1982, p. 26. An announcement of a joint cable venture and the opening of an audio and video communications complex to serve cable and broadcast television in Britain.

Buske, Sue Miller. **"How Access Centers Are Managed."** *VideoUser*, October 1982, p. 31. A discussion of three common management structures in cable community access centers.

"Eastern Show Takes Another Step Forward." *TVC*, November 1, 1982, pp. 82-88. A report on features of the Southern Cable Television's Eastern Show, which focused on federal activities, government relations, alternative technologies, and advertising.

"Economic Forecast." *TVC*, October 1, 1982, pp. 24-68. A collection of predictions by industry executives on the economic challenges for their operations.

Evanow, Peter. **"Educational Process."** *CableVision*, October 25, 1982, pp. 57-58. A report of a presentation at Harvard University by cable industry leaders on public policy and programming.

Ewalt, Jim. **"State Legislation: How Did Cable Fare in 1982?"** *TVC*, November 1, 1982, pp. 60-66. A discussion of state legislative activities in 1982 and forecasts for legislative issues in 1983.

Gladstone, Brooke. **"Rockford Takes a Chance on All-Local, All-Cable PTV."** *Current*, September 30, 1982, p. 8. A look at a public television station in Rockford, Illinois, delivered by cable and featuring all local production.

Leddy, Craig. **"Cable's Hip New Classroom."** *CableVision Plus*, October 11, 1982, pp. 14-16. A profile of the Appalachian Community Service Network, a nonprofit, national network for the distribution of educational programming.

Livingston, Victor. **"'Newsday' Splash."** *CableVision*, October 25, 1982, pp. 13-14. An announcement of the daily newspapers plans to launch a 24-hour cable channel.

Livingston, Victor. **"Signing On"** *CableVision*, October 4, 1982, p. 21. An announcement of plans for a cable service aimed at hearing-impaired viewers.

Smith, Ilene. **"NECTA: The Tradition Continues."** *TVC*, November 1, 1982, pp. 24-26. A report on sessions at the New England Cable Television Association convention in Massachusetts.

Taub, Eric. **"Times Mirror."** *CableVision*, November 15, 1982, pp. 83-105. A look at the Times Mirror Cable Television division.

Teletext/Videotext

"After the Lawyers . . . Come the Doctors." *Monitor*, October 1982, pp. 1-2. An overview of the American Medical Association's GTE Telenet Medical Information Network, which provides drug, disease, and bibliographic information to medical care providers.

"**Another Skirmish in the Teletext War**." *The Scott Report*, September 1982, pp. 2-7. An examination of the WGN vs. United Video, Inc. case which will determine ownership and control of television signals.

"**Book Learnin' by Teletext**." *Broadcasting*, November 8, 1982, p. 94. A report on the use of teletext at the University of Alaska to deliver educational services to rural students.

"**Business Teletext to Test**." *Electronic Media Edition*, November 11, 1982, p. 2. A description of a satellite-delivered national business teletext system to begin testing in 1983.

"**Captext Unveiled**." *Broadcasting*, September 20, 1982, p. 66. An announcement of a 100-terminal videotext test in Washington, DC.

Canape, Charlene. "**Savvy NJ Town Gets First Try at CBS-AT&T Videotext**." *Electronic Media Edition*, November 7, 1982, p. 1, 22. A profile of the New Jersey town selected for a three-month test of videotext.

Downs, Joan, "**The Writing on the Screen**." *The Dial*, November 1982, p. 8. A description of teletext and videotext, the three competing standards, and user reaction to field tests.

Gelman, Morrie. "**Producer Readies New Quickscan System**." *Electronic Media*, October 14, 1982, p. 4. A discussion of a new method to transmit photographic images or alpha-numeric data using television signals.

Gupta, Udayan. "**Videotext May Spell Survival for Banks**." *Electronic Media Edition*, October 21, 1982, p. 20. A report on Chemical Bank's entry into videotext with electronic home banking and other transactional services.

Lavers, Daphne. "**Cable Television and Videotext**." *Cable Communications*, September 1982, pp. 28-30. An interview with the Canadian Deputy Assistant Minister of the Department of Communications on the role of cable television in videotext-based communications systems.

Michalowska, Anika. "**Videotext on Verge of Big Ad Impact**." *Electronic Media Edition*, October 21, 1982, p. 3. A projection of videotext's potential as an advertising medium.

Milmo, Sean. "**Prestel Goes A-Wooing—Again**." *Advertising Age*, November 15, 1982, p. M24. A report on the British public videotext system's marketing transition from the business sector to the mass consumer market.

Orr, David. "**Prestel Videotext—The Present and the Future**." *Telecommunications*, October 1982, pp. 47-48. A profile of the British videotext system, Prestel.

"**Pros and Cons of Electronic Publishing**." *Broadcasting*, November 8, 1982, p. 93. A review of comments presenting the benefits and dangers of electronic publishing at a conference of newspaper representatives.

Radding, Alan, "**Bank Offers At-Home Service**." *Advertising Age*, September 27, 1982, p. 48E. A discussion of a pilot project of electronic banking for participants who already own home computers.

SOURCESCAN

Books, research reports, and occasional papers with information on how to obtain the publications.

Braille Catalogs, Baltimore Braille Reading Association. Available from the Center for the Visually and Hearing Impaired, 301/936-1613 or the Maryland State Library for the Blind, 201/659-2668. Free.

A guide, written in Braille, to special telephone services. The six booklets provide information about taped telephone services of the Better Business Bureau, Planned Parenthood, Provident Hospital, Sheppard and Enoch Pratt Hospital, Towson State University, and the University of Maryland.

Cable Communication, by Thomas F. Baldwin and D. Stevens McVoy. Prentice-Hall, Inc. [Rte. 9 W, Englewood Cliffs, NJ 07632] 1982. 16 pp. $23.

A discussion of cable technology, services delivered by cable systems, organizations, and operations, and the future of cable and other communication technologies. This textbook gives a broad overview of the cable industry, its development, and issues of public policy surrounding its widespread introduction.

Educational Telecommunications for Alaska, Alaska State Department of Education, Office of Educational Technology and Telecommunications. Available from ERIC Document Reproduction Service [P.O. Box 190, Arlington, VA 22210; 703/842-1212]. Refer to ED numbers 217 890 to 217 893 when requesting pricing information.

Four volumes documenting the implementation, evaluation, and institutionalization of an electronic mail system, a computerized database on educational resources, and a microcomputer-based system of instruction for rural high schools in Alaska. These books discuss the educational situation in Alaska in terms of geography, climate, and ethnic groups, and the state's involvement in telecommunications to provide the population with instruction.

Expanding Learning Through New Communications Technology, edited by Christopher K. Knapper. Jossey-Bass Publishers [433 California St., San Francisco, CA 94104]. 107 pp. $7.95

A collection of essays describing recent innovations in telecommunications and their positive and negative effects.

Index and Description of Educational Application Software, Digital Equipment Corporation, Education Computer Systems [Maynard, MA 01754; 617/897-5111]. 1981. 535 pp. Free.

A resource for educational computer software. This book is an index of programs with specific applications for educational administration and instruction.

Learning with Computers, by Alfred Bork. Digital Equipment Corporation, Digital Press Order Fulfillment [12A Esquire Road, Billerica, MA 01862]. 1981. 304 pp. $25.

A collection of articles on using the computer as an interactive teaching and learning device. This book covers hardware and software for computer-assisted learning, how to use programs for an individual learning environment, motivations for using computers in the classroom, advantages and programs of instructional computing, and many other topics.

Listening to the Future: Cable Audio in

Robinson, Kenneth. "**Public Information and 'Electronic Publishing' Services**." *Journal of Communications*, Vol. 32 (Autumn 1982), 103-13. An analysis of legislation governing AT&T's competitive entry into the computer/data processing field and electronic publishing.

"**$10 Million National Home Banking Project Set for Next June; ADP is Coordinator**." *Teleservices Report*, November 1982, p. 1. A report on an electronic home banking project conducted as part of the CBS-AT&T experiment in New Jersey.

Varney, Norman. "**Videotext Prospects —Hot or Not?**" *Advertising Age*, November 15. 1982, p. M15. An examination of two opposing views on the prospects for consumer acceptance of videotext.

Wentz, Laurel. "**Brazilian Phone Company Starts Viewdata Test**." *Electronic Media*, October 14, 1982, p. 18. An announcement of a two-year videotext test in Brazil.

"**World Hunts for a Standard to Enhance Text and Graphics**." *Monitor*, October 1982, p. 8-10. An overview of the three competing systems of videotext technology and the need for a standard to assimilate computer graphics.

Computers

"**Strategies for Campus Computing**," by John W. McCredie, *Perspectives in Computing*, October 1982, pp. 4-13.

A study of strategic planning for information processing activities at ten colleges and universities was coordinated by EDUCOM during the 1981-82 academic year. The study differed from others in that it did not examine campus hardware, software, or budgets; instead, it concentrated on ideas, goals, and plans. The underlying strategies that shape implementation decisions were the focus of the study, which was structured as a set of case studies.

The following institutions participated: California State University System, Carnegie-Mellon University, Cornell University, Dartmouth College, Hamilton College, University of Iowa, University of Minnesota, Pepperdine University, Rensselaer Polytechnic Institute, and Stanford University. They were selected because of the innovative campus approaches to information processing and their willingness to describe the internal planning processes used by their organization.

Several underlying assumptions were [illegible] to each institution, including [illegible] having to do with (1) creation, storage, retrieval, processing, use, and dissemination of information as the core of academic effort, and (2) planning for information processing activities as an important institutional activity.

The extent and types of planning used reflected both the academic character and management style of the college or university. Major differences appeared to depend on the type and duration of an institution's involvement with computing and the size of the organization. Several common denominators were found, however, and they had to do with institutional response to organizational structure, decentralization, personal computers, networking, library automation, information processing literacy, text processing, and electronic mail.

"**The Chip: Electronic Mini-Marvel That Is Changing Your Life**," by Allen A. Boraiko, *National Geographic*, October 1982, pp. 421-56.

The chip, or integrated circuit, is a complex of electronic switches controlling electric current and fabricated on a fleck of silicon. Introduced in 1959, it has advanced spectacularly and has virtually infinite applications. Today's microprocessor (a "computer on a chip") embodies both logic and memory. Eventually one billion transistors, or electronic switches, may crowd a single chip—making possible storage of the text of 200 long novels on a single memory chip.

This lengthy article reviews the development of the chip and poses questions about its ramifications for society as a whole. It includes a description of the manufacturing process, shows the intricate circuitry on a microprocessor, reports on the popularity of home computers and on the uses of robots in Japan and by the U.S. Army, and describes the use of computers by home workers and the handicapped. Problems of worker supervision and computer "corruptibility" are noted. A short glossary is included, and the article also gives a detailed description of the workings of a digital watch.

Anandam, Kamala and J. Terence Kelly. "**Teaching and Technology: Closing the Gap**." *T.H.E. Journal*, November 1982, pp. 84-90. A discussion of principles that may help close the gap between human

the '80s, by Joshua Koenig and Ann Stookey. National Public Radio [2025 M St. NW, Washington, DC 20036]. 1982. 69 pp. $10.

A report on the prospects for cable audio services, this booklet examines the market for cable-specific programming to offset budget cutbacks at National Public Radio.

1982-1983 Videotex Directory, Arlen Communications and the Institute for the Future. Available from Institute for the Future, [2740 Sand Hill Road, Menlo Park, CA 94025]. 1982. 278 pp. $150.

A comprehensive guide to videotext, teletext, electronic publishing, and interactive transactional services, this book provides information about 300 organizations offering products and services for this field. Each entry includes names, addresses, and phone numbers for organizations and lists their key personnel. A bibliography serves as a guide to other information sources.

Pushbutton Fantasies, by Vincent Mosco. Ablex Publishing Corporation [355 Chestnut St., Norwood, NJ 07648]. 1982. 240 pp. $22.50 cloth; $10.95 paper.

A critical look at forecasts and perspectives on the technological revolution, this book focuses on videotext to explore social relations of communications and information transfer. A description of videotext technology is included, as well as an examination of its political and economic role for the future.

Teaching on Television, Association for Media-Based Continuing Education for Engineers, Inc. [225 North Avenue NW, Atlanta, GA 30332]. Two half-hour videocassettes, $50 each; 198-page final report, $25. Free brochure available from Laura Lee Rob, AMCEE Dept. 29A, 404/894-3362.

A set of training materials designed to teach instructors how to best use the video medium for classroom television. Included are "Operating a Classroom TV Studio," aimed at production personnel, and a final report, entitled "Towards Improved Candid Classroom ITV," which provides a literature review, outlines of the accompanying videocassettes, and instruments for evaluating videotapes.

Telecommunications for Local Government, edited by Fred S. Knight, Harold E. Horn, and Nancy Jesuale. International City Management Association 1120 G Street NW, Washington, DC 20005; 202/626-4600. 1982. 224 pp. $19.50

A look at telecommunications from the local government perspective. This book offers examples of how other local governments have integrated new technologies into their administrative systems. It also includes discussions on the uses of cable, as well as privacy, interconnection, and antitrust issues.

resources and technology in order to promote instructional computing.

Biemiller, Lawrence. "**Microcomputers Expected to Bring Radical Changes in Testing**." *Chronicle of Higher Education*, November 17, 1982, p. 4. An examination of the impact of microcomputers on standardized testing.

Charp, Sylvia. "**Trends—Timesharing, Microcomputers, Networking**." *T.H.E. Journal*, November 1982, pp. 82-93, 99. An examination of three stages of development in the educational use of computers.

"**Computers in the Groves of Academe**." *T.H.E. Journal*, November 1982, pp. 80-81. A look at several projects using computers for historical research in universities.

"**How to Find Good Software**." *Electronic Learning*, October 1982, pp. 40-43. A discussion of how to select appropriate software through previewing programs.

Lu, Cary. "**Microcomputers: The Second Wave**." *High Technology*, September/October 1982, pp. 36-52. An overview of the new 16-bit microcomputer design, how microcomputers work, and market projections.

Plane, Robert A. "**Merging a Library and a Computing Center**." *Perspectives in Computing*, October 1982, pp. 14-21. An overview of the Educational Resources Center at Clarkson College which is linked by computer to the rest of the campus to support instructional, research, and administrative activities.

"**The Software Yellow Pages**." *Electronic Learning*, October 1982, pp. 56-63. A directory of resource publications that review software for the most popular microcomputers.

"**The Software Line-Up**," *Electronic Learning*, October 1982, pp. 45-48. A guide to evaluating software.

"**Using Computers in Teaching**." *UW Teaching Forum*, September 1982, p. 3. A review of a three-day seminar on computer-assisted instruction presented at the University of Iowa.

Weintraub, Herbert. "**Dedicated Computers: A Promising Solution for Adult Academic Literacy**." *T.H.E. Journal*, November 1982, pp. 93-94. A discussion on the use of computers designed to teach basic skills to adults.

Zuboff, Shoshana. "**New Worlds of Computer-Mediated Work**." *Harvard Business Review*, September/October 1982. pp. 142-52. A discussion of ways that managers can use information technology to develop approaches to work supervision in the computer age.

Radio

Gelman, Morrie. "**NPR Adopts Pay Radio for Revenue**." *Electronic Media Edition*, September 23, 1982, p. 3. A report on NPR's plan to impose a subscription fee to allow consumers to tape radio programs.

Price, Michelle. "**NPR Quest for Funds Threatens Services to Blind**." *Access*, September 1982, p. 4. A review of an NPR petition before the FCC to deregulate FM subcarriers and authorize their use for commercial purposes that is drawing opposition from public service organizations that provide reading services to the sight impaired.

Satellites

Adams, Michael J. "**Satellites Big in European Television**." *Broadcast Engineering*, September 1982, pp. 82-90. A description of Europe's first experimental satellite TV service which will test audience reaction, costs, and effectiveness of subtitling in different languages; identify and resolve technical problems; and test schedule patterns.

Brown, Adele Q. "**Satellite Services in New York**." *Satellite Communications*, October 1982, pp. 50-53. A listing of satellite services specializing in transmission/reception for video channels.

Carpinello, Cheryl R. "**Satellite Fundamentals.**" *Satellite Communications*, October 1982, pp. 44-46. A review of topics discussed at a two-day seminar introducing the technical aspects of satellite communications.

Easton, Ken. "**CANCOM Terrestrial Distribution—Broadcast or Cable?**" *Cable Communications*, September 1982, pp. 21-23, 26. A discussion of the most cost-effective method for delivering programming by satellite to rural areas in Canada.

Harrison, David. "**Changing Signals: Satellite View for the '80s**." *Advertising Age*, October 4, 1982, pp. M19-20. A view of the Canadian market for new video services and technologies that are now limited by restrictive government policies.

Koper, Peter. "**There's A New Kid in Town**." *American Film*, October 1982, pp. 17-19. A report on the variety of new technologies that pose a threat to cable distribution of programming.

Marshall, Irl. "**An Overview of the Satellite Communications Industry**," *Satellite Communications*, October 1982, pp. 34-36. An explanation of satellite fundamentals for the lay person, including a historical overview of the industry.

"**1982-83 Satellite Industry Directory**." *Satellite Communications*, September 1982, pp. 6-82. A listing of agencies, carriers, and suppliers for the satellite industry.

"**SCUS '82 Wrap Up**." *Satellite Communications*, October 1982, pp. 20-28. A description of activities at the fourth annual satellite users conference.

Teleconferencing

"**Trends in Teleconferencing Today Indicate Increasing Corporate Use**," by Elliott Gold. *Communications News*, October 1982, pp. 48-49.

Research on sales figures from the suppliers of various teleconferencing equipment, systems, and services indicates that the industry is now doubling on an annual basis. Audio and audiographic teleconferencing seems to be growing faster than full-motion video teleconferencing, with the exception of point-to-multipoint large events.

Although some corporations, such as the Bank of America and the Atlantic Richfield Company, have been using audio teleconferencing for years, most have not until recently. However, trends suggest that most Fortune 500 companies will implement some form of audio, audiographic, or full-motion video teleconferencing in the next decade.

Among the technological developments that will influence the demand for teleconferencing are: supplemental graphic/text devices to enhance audio transmission; two-way video conferencing such as the AT&T Picturephone Meeting Service (available after January 1, 1983); and "ad hoc" video conferencing, where video is transmitted from one site to many on a temporary basis using satellites first and then television receive-only (TVRO) antennas.

The growth trends are further influenced by the drops in cost of technology, as well as the overall cost-savings gained by eliminating both out-of-town and cross-town travel.

Badoud, Gary. "**Satellite Services in Los Angeles**." *Satellite Communications*, November 1982, pp. 50-53. A guide to videoconferencing facilities, equipment, and personnel in the Los Angeles area.

Danna, Sammy R. "**The Videoconferencing Facility at Allstate Insurance**." *E-ITV*, October 1982, pp. 23-28. A look at the design of a videoconferencing room at Allstate Insurance Co.

Dick, Robert N. "**An All-Purpose Reaction Form for Teleconferencing**." *E-ITV*, October 1982, pp. 95-98, 101. A guide to preparing a form to evaluate audience response in teleconferences.

Diebler, Mary. "**Video Teleconferencing for Libraries and Librarians**," *American Libraries*, October 1982, pp. 599-600. An examination of the role of libraries in video teleconferencing as viewing sites, sponsors, or participants.

Hough, Bruce. "**So You Want To Do Teleconferencing**?" *E-ITV*, November 1982, pp. 52, 56, 60. A discussion of things to consider when planning video teleconferences for business meetings.

"**Teleconferencing Connects for Good Marks in Survey**." *Electronic Media Edition*, September 30, 1982, p. 11. A report on findings of a survey commissioned by the International Association of Business Communicators to test the effectiveness of teleconferencing.

"**Teleconferencing Report**." *E-ITV*, November 1982, pp. 24-30. An update of activities by companies using teleconferencing, including services and facilities and upcoming conferences.

Copy Delivery Systems

"**A Three-State Duplication Service**," by Dan Mook, *E-ITV*, October 1982, pp. 82-85.

Agencies in three states have developed a cooperative program for video duplication. Participants are 13 Educational Service Units (ESUs) in Nebraska, four in Minnesota, and one Regional Service Center in southeastern Kansas.

All consortium members and participating film companies and distributors use the same video duplication agreement. The intent is to obtain video duplication rights to films owned by members and to provide a continuing source of income to the 20 film companies represented under the contract. All of the film collections from a given film company held by all members are considered as a common collection of the consortium.

Although member ESUs provide tape duplication services for local schools via local, in-house equipment, the consortium's administrative agent also has underwritten purchase of a film chain and establishment of a multiple mastering/duplication center. This central facility has proven to be a cost-saver for the individual agencies since they do not need to produce as many video masters.

Funding for all projects of the consortium is from the individual members.

Specific agreements have been reached with the Encyclopaedia Britannica Educational Corporation and the Television Licensing Center (for such series as "Cosmos" and "Life on Earth").

"**Hard Times Fuels Education Swing to Video: Can Distributors Keep Up**?" *The Videoplay Report*, October 11, 1982, pp. 1-4.

As schools and colleges are faced with budgetary restrictions, they are becoming more receptive to video programming. Videocassette recorders (VCRs), in particular, are becoming more popular because they are cheaper and more flexible than 16mm projectors. They are also being used for off-air recording.

Recent regulations allow any broadcast television program on any station to be off-air recorded at a teacher's initiative and held for two classroom uses or for preview purposes. Broadcast courses and teacher training programs can similarly be recorded and later used.

Some distributors offer videocassettes at substantially lower prices than 16mm films. Further incentives come from producers of theatrical and informational programming for the public; schools are interpreting section 110.1 of the copyright law as permitting them to buy any first-sale home video copy of a title and use it in perpetuity and without restriction for classroom instruction.

Another incentive for education's movement into VCR is the availability of large amounts of free programming over and above the cost of tape and transfer dubbing. In addition, many useful public domain titles are being acquired by schools.

Previous distinctions between school and home use, prerecorded and off-air, and institutional licensing and consumer first-sales are becoming blurred in the effort to take advantage of cost savings.

"**When Interactive Video Works**," by Stephen Gach, *Video Systems*, October 1982, pp. 14-21.

Interactive video (I/V) seems to have real potential for both business and education since it adds efficiency and effectiveness to training procedures. I/V simulations can bring textbook situations to life and improve retention of information. I/V can also provide trainers with instant feedback on the learning process itself.

Sony is one of the companies, through its Video Utilizations Services group, that trains users on effective design and utilization of interactive video. Significant developments have been the introduction of remote control units that access specific parts of a program, and especially, the integration of microprocessor and videotape technologies—the basis of I/V.

I/V's central characteristic of alternative paths means that each viewer must go through the program individually. In a training situation, this means that each student can progress at his or her own rate, make mistakes and correct them without embarrassment, and ask repetitive questions. In addition, programming can be designed to respond individually to novice or slow learners as well as expert learners. With its versatility, I/V technology obviously has advantages for both trainers and students.

Kindleberger, Charles P. "**Whither the Interactive Videodisc**?" *E-ITV*, October 1982, pp. 60-65. A view of several factors that will determine the status of interactive videodisc systems in the future.

Kleyman, Paul. "**Who Oughta Be in Pictures**?" *Video Systems*, October 1982, pp. 56-59. A view of nonbroadcast video use of professional talent to improve the quality of videotapes.

Nohling, David and Stan Hankin. "**Focus on Interactive Technology at Business, Industry Sessions**," *ITA News Digest*, September/October 1982, pp. 7, 19. A report on a seminar focusing on interactive video technology and the changing role of the corporate media manager.

Oliver-Hayes, Joyce. "**Dr. Richard Walker**." *Video Systems*, October 1982, pp. 40-45. An interview with an instructional designer for a videodisc publishing firm that specializes in problem-solving for business and education.

Pitsch, Peter K. "**Home Video Competition: What Should Regulators Do**?" *TVC*, October 1, 1982, pp. 78-85. A discussion of how the FCC might address regulation of the home video market.

Sundt, Jerrold. "**Videodisc Geography**," *Video Systems*, October 1982, pp. 30-35. An examination of the geography of placing material on videodisc for viewer reinforcement.

Order Now

A guide and directory of programs using telecommunications for off-campus adult learners is now available. See the coupon on page 11 to order your copy of *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs*, by Raymond J. Lewis.

MACROSCAN

Programs, projects, conferences, workshops, other events, and funding sources.

Nebraska ETV Offers Statewide Service to Hearing Impaired

The Nebraska Educational Television Network is one of the first public television systems in the country to provide a statewide, free news and information service specifically for the hearing impaired. The service is unique in that it also offers news geared specifically to the hearing-impaired population. This information is supplied by the Nebraska Commission for the Hearing Impaired and other agencies in the state.

The Hearing Impaired Video Information Service, called HI-VIS, was officially activated at the Terry M. Carpenter Nebraska Educational Telecommunications Center by Governor Charles Thone, making state, local, and national news from Associated Press News Cable available to an estimated 96,000 hearing-impaired Nebraskans. HI-VIS is a cooperative project of three state agencies—the Nebraska Commission for the Hearing Impaired, the Nebraska Educational Television Commission, and Station KUON-TV of the University of Nebraska-Lincoln.

This teletext news and information service is available seven days a week throughout NETV's 16-hour broadcast day. The continuous, slow-moving text that appears on the television screen is visible only to viewers with special decoders. The adapter (decoder), marketed under the trade name "TeleCaption," is the same piece of equipment used to receive closed-captioning programming.

HI-VIS is made possible through use of Line 21 of the standard American television broadcast signal—a blank line within the series of 525 horizontal lines that make up television pictures. The technology to use Line 21 for transmitting closed-captioning and other types of text materials was developed by the Public Broadcasting Service. In 1976, the Federal Communications Commission permanently authorized Line 21 for this purpose. HI-VIS is transmitted throughout Nebraska at no extra cost because it "rides free" as a part of the regular Nebraska ETV Network broadcast signal.

A monthly HI-VIS program schedule is available from the Nebraska ETV Network Information Department, P.O. Box 83111, Lincoln, NE 68501.

Videodiscs Developed for Physics Instruction at KSU

A Kansas State University physicist is developing instructional packages for introductory college-level physics with a $56,343 grant from the National Science Foundation. The materials will tie the microcomputer to interactive videodiscs. The microcomputer controls selection and speed of the video segments that students view. Once data are collected, the students use the microcomputer to analyze them.

Dean Zollman has completed two videodiscs and is working on another two with instructors from other institutions throughout the country. His Tacoma Narrows Bridge Collapse videodisc is the first instructional videodisc to be distributed by a major publishing company, John Wiley & Sons of New York.

Zollman is also the recipient of two previous NSF grants for the production of a videodisc on the physics of automobile collisions, and development of a new approach to physics laboratories. Another award enabled the Department of Physics to install and operate a Video-Computer Learning Center.

For more information, contact Zollman at Kansas State University, Manhattan, KS 66506.

Media Group Serves Deaf and Hearing-Impaired

The Deaf Media Coalition is a group established to ensure accessibility to broadcast and cable television programming for the deaf and hearing-impaired communities in Boston. Current efforts are directed at developing cable television as a media resource for the deaf through: channels allocated to meet these communities' needs with captioned, signed, and special interest programming; local programs produced by and for the deaf community; and a training center with special equipment for telephone communication with the deaf.

For more information, write to the Deaf Media Coalition, 215 Brighton Ave., Allston, MA 02134; or call Kenneth Cheeseman, Boston Shakespeare Co. 617/267-5630.

National Competition Recognizes Computer-Based Education Center

The University of Akron's Center for Computer-Based Education (CBE) is now recognized as one of the nation's leading programs designed to meet changing educational demands, as a result of its participation in the G. Theodore Mitau Competition sponsored by the American Association of State Colleges and Universities (AASCU). Of the 22 AASCU institutions reviewed for nontraditional programs or courses of study, the CBE center emerged in the top six judged.

Computer-based education provides for learning at the student's own pace. The computer serves as a medium for delivering instructions and interpreting answers for immediate results. One of the CBE center's major goals is to provide educators, elementary through university level, with the knowledge and means to deliver interactive, individualized instruction to their students.

The CBE center began in 1972 as a pilot project to investigate the potential of computer-assisted instruction at the University of Akron. The center now presents CBE offerings on basic English, accounting, chemistry, basic statistics, mathematics, reading, and foreign language. In addition to these standard offerings, many UA music students have used the Apple microcomputer to practice their sight singing and ear training.

Students have access to over 80 terminals throughout the campus. A network of terminals was also established in area elementary schools, with 14 schools currently supported by the center. Recently, the services have extended to local businesses and industries that are beginning to explore the use of computers for training.

The Mitau award was established in 1979 to honor the noted political scientist and educator who advocated breaking with academic tradition in order to meet the emerging needs of new students. He was influential in the creation of the Fund for the Improvement of Postsecondary Education, and as chancellor of the Minnesota State University System, he was instrumental in founding Metropolitan State University, a college without walls.

For information on CBE contact Lynn Johnson, acting director, Computer-Based Education, 308 Carol Hall, University of Akron, Akron, OH 44325; 216/375-7848.

Electronic Blackboard Serves On and Off-Campus Students Simultaneously

At the University of Illinois College of Engineering, the electronic blackboard brings university courses to students and professional engineers in business and industry across the state. More than 100 students already have earned master's degrees through exclusive or partial use of the remote educational device.

Credit courses are delivered to industrial locations via the electronic hook-up. Students in the remote sites receive the courses as they are being taught by faculty in special studio classrooms on campus. Off-campus classrooms are equipped with three television monitors, one blackboard, and four or more microphones to enable remote students to participate in discussions, and receive and transmit written materials.

The electronic blackbord transmits writing over telephone lines. When the instructor writes on the pressure-sensitive mylar surface, his handwriting is electronically converted into impulses that are transmitted. At the receiving end, the signals are reconverted and instantaneously displayed on a television monitor. The audio portion is carried over a second telephone line via a portable conference telephone that features hands-free operation, a built-in loudspeaker, and two-way conversation.

The U. of I. has developed a system of videotaping the blackboard courses and now offers videocassettes of credit and noncredit, graduate and undergraduate courses for rental or purchase. Illinois firms receiving the electronic blackboard courses are Sundstrand Aviation Operation and Barber-Coman Co., Caterpillar Tractor Co., Harris Corp. Broadcast Products Division; Beloit Corp., and Illinois Power Co.

For further details, contact Jim Seyler, academic coordinator, Continuing Education for Engineering, University of Illinois at Urbana-Champaign, Champaign, IL 61820; 212/333-6634.

Tandy Corp/Radio Shack Theme Announced for Educational Grants

Radio Shack, a division of the Tandy Corporation, is setting the subject for proposals in the fourth submission cycle of the company's Tandy TRS-80 Educational Grants Program as "Unique and Innovative Microcomputer Applications in Education." Deadline for submissions under this theme is March 31, 1983.

The Tandy TRS-80 Educational Grants Program is designed to encourage and support the successful application of microcomputer technology in U.S. educational institutions. Through the program, TRS-80 hardware, software, courseware, and related products totaling $500,000 per year are awarded to individuals and nonprofit organizations whose proposals are selected as providing the greatest benefit to the American educational community under selected proposal themes. Equipment is allocated based on the recommendations of an Educational Grants Review Board composed of a number of distinguished educators.

Previous awards made in 1982 addressed the use of microcomputers to teach basic skills in elementary education, microprocessors for the education of the handicapped and disadvantaged, and computer literacy among teachers.

Associate Members Join Postsecondary Council

The Postsecondary Education Council (PSEC), established by the Chicago-based Central Educational Network in 1979, focuses on the telecourse needs of postsecondary institutions. The council serves educational enterprises in the U.S. that are exploring or operating telecourse programs.

While nine states are currently members of the Postsecondary Education Council, a grant from the Exxon Educational Foundation assisted in the development of an associate member category that has made it possible for 87 two- and four-year, and vocational/technical schools to join in the telecommunications service.

Enabling these institutions to continually upgrade their telecourse offerings and expand their audiences, the PSEC offers such services as:

- participation in telecourse group buys;
- attendance at annual program screening;

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- access to the 148 titles in the Free Loan Library of PSEC;
- participation in annual professional development conferences;
- use of the PSEC telecourse brokering service;
- participation in the production consortia for new programming.

For additional information, contact Carol Koffarnus, vice president for postsecondary telecommunications, Central Educational Network, 4300 West Peterson, Chicago, IL 60646; 312/545-7500.

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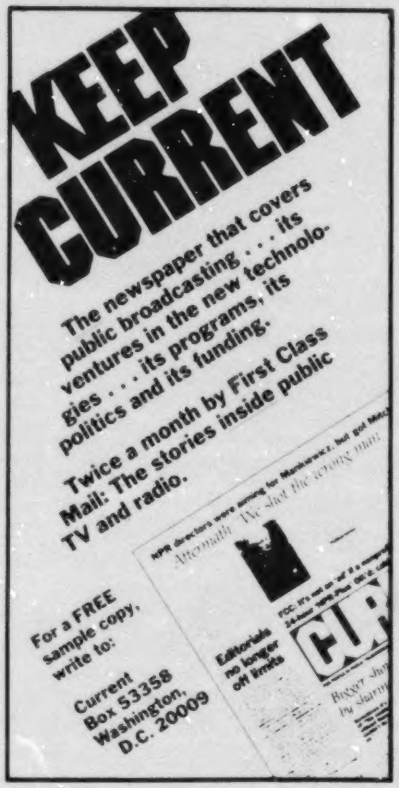
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Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

Jinny Goldstein
Public Broadcasting Service

Charlotte Marson

Hilda Moskowitz
Fund for the Improvement of Postsecondary Education

Elizabeth Young
Public Service Satellite Consortium

Center for Learning and Telecommunications

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Telescan

Editor: **Marilyn Kressel**
Managing Editor: **Karen Sibert**

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TELESCAN

MARCH/
APRIL 1983

The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUE 10

New Study Reveals Scope Of Telecommunications Programs in Higher Education

Did you know that . . .

- Emory School of Medicine's television network broadcasts live to 32 institutions in the Atlanta metropolitan area and leases and sells videotapes to thousands of clients nationally and internationally?
- University of Wisconsin-Extension enrolls approximately 36,000 students each year in 150 courses offered through its Educational Telephone and Statewide Extension networks?
- Stanford University's Instructional Television network broadcasts live Stanford University courses to engineers and other high technology staff employed by 118 business and industrial firms?
- The College of San Mateo combines microcomputers and videotapes to deliver instruction at worksites to employees of electronics industries in the San Francisco area?

If you find some of these programs startling because they dismantle the staid image of classroom-oriented higher education, then you need to find out more. Now available from the publishers of *TELESCAN*, is a benchmark new study, *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs*, by Raymond J. Lewis. This publication marks the first time that comprehensive information on the uses of telecommunications for adult learning has been published in a single volume.

As your up-to-date source of information on how telecommunications technologies are changing the face of postsecondary education in the 1980s, *Meeting Learners' Needs Through Telecommunications* provides you with many new insights into how programs using telecommunications technologies to deliver instruction are dealing with important issues such as enrollments, finances, faculty roles, curriculum, and the diverse problems encountered in the course of developing these programs.

The book's descriptions of 70 programs include details on 16 areas such as program financing, staffing, and resources available. The programs use applications of video, audio, and computer technologies to reach working adults, the handicapped, older adults, prisoners, rural residents, professionals, and pink- and blue-collar workers. In

continued on page 2

Making Room For New Technologies

A technology commentary from Ed Meek, University of Mississippi, reprinted from *Broadcasting*

Some people wonder if there is room in the technology marketplace of tomorrow for all of today's technology. I wonder not if there is room, but whether those of us in the telecommunications industry are prepared to take advantage of the greatest opportunity and marketing challenge of the century.

Direct television broadcasting from satellite, satellite master antenna television, home earth receivers, cable, low-power television, satellite radio, cellular radio, computers, teleconferencing, and fiber optics are just some of the emerging technologies that most futurists agree will change the face of societies throughout the world. The challenge to develop the equipment necessary for these technologies is being met, but the larger challenge that remains is for innovative business professionals to develop marketing and support programs that will successfully integrate these technologies into our lives, into business and industry, into education and other institutions throughout society.

Consider these thoughts:

- During the next five to ten years we will build and install more communi-

continued on page 10

In this issue . . .

American Chemical Society launches series of teleconference continuing education courses .... **page 2**

National University Consortium initiates study on use of videodiscs for broadcast distribution .... **page 6**

Public Broadcasting Service premieres "The Computer Programme" .... **page 8**

Adult education organizations assess interest and use of TV and radio resouces for information and adult learning .... **page 9**

The Center is a program of the American Association for Higher Education One Dupont Circle Washington, DC

SCAN

Dear Subscriber:

I am pleased to draw your attention to our continuing efforts to improve *TELESCAN* and make it as useful as possible for you. A number of readers have suggested to us that the vast amount of information included in *TELESCAN* might be better organized along the technologies. We are responding to that concern with this issue.

Don't worry! All the material we've always included—the information from over 125 periodicals, as well as books, research, and project-related information—will continue to appear in each bimonthly issue of *TELESCAN*. Now, the abstracts and articles will be organized under the technology they address as part of our three new sections, Videoscan, Audioscan, and Compuscan. Our new iteration of Macroscan will be the place to find materials not easily categorized under video, audio, or computer technologies.

How do you use our new format? Easy. If your interest is cable television, look down the Videoscan section for the cable television subhead. There you will find symbols denoting the articles, books, programs and projects, and Washington-based activities and regulatory issues that pertain to cable television.

Articles

Books

Washington-based activities

Programs and projects

Legal/regulatory issues

This way, you won't have to hunt through the pages of our old Printscan, Sourcescan, and Capitolscan sections to ferret out your particular area of interest.

In addition, we're also expanding *TELESCAN*'s monitoring capabilities. Some of you have suggested you would like us to select for reprinting the one or two best articles from our bimonthly review. Well, we've done it! We now plan to incorporate reprints of articles we feel are particularly good as part of our front-page format. We're kicking off this section with a reprint of *Broadcasting*'s "Monday Memo" of January 10, 1983, by Ed Meek of the University of Mississippi. We think it presents a cogent overview of how the much-touted new developments in telecommunications technologies will actually impact upon education and other segments of society.

It is especially noteworthy that our efforts to bring you a new and better *TELESCAN* coincide with the publication of *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs* by Raymond J. Lewis. Ray's study marks the culmination of a two-year effort to document uses of telecommunications technologies in 70 of the nation's postsecondary institutions. The book's detailed program descriptions and analysis of current practice and future trends make it a unique source of information on the implications of telecommunications technologies for postsecondary education in this decade.

Finally, our efforts do not stop here. Please get back to us with your reactions to *TELESCAN*'s new format and our new book. And don't forget, our Inquiry Service is available to you Tuesdays and Wednesdays, 1:30-4:30 p.m. EST at 202/223-3092 or 202/223-3093.

Sincerely,

Marilyn Kressel

Marilyn Kressel
Director
Center for Learning and
Telecommunications

Telecommunications Study

continued from page 1

addition to the descriptions, the guide component of the book provides an in-depth analysis of current patterns and future trends in the uses of these telecommunications technologies for instruction.

Written with the nontechnical educator or program manager in mind, *Meeting Learners' Needs Through Telecommunications* is designed for easy access as a basic reference tool for the busy decision-maker. Detailed charts cross-reference type of technology and educational mission with individual institutions. As a result, if you need to know which of the programs in the book are delivering adult continuing education via interactive cable television, a quick scan down the cross-reference charts will give you your initial answer, which you can then pursue through the detailed program description. In addition, each program description is followed with a list of resources available, ranging from telecourses to print materials, promotional packets for students, faculty handbooks, student handbooks, press kits, brochures, and more. Contact people at each institution are identified with addresses and phone numbers.

Meeting Learners' Needs Through Telecommunications combines an attractive, readable format with utility. Along the margins of each program description you can get a quick glimpse at important aspects of each program such as problems encountered, noteworthy features, and future plans. This will provide you with a greater understanding of which programs are dealing with commonly encountered issues such as faculty resistance to uses of telecommunications technologies, limited financial resources, and changing institutional priorities.

Author Raymond J. Lewis is research director of the Center for Learning and Telecommunications. Previously a program officer at the Fund for the Improvement for Postsecondary Education, he monitored and evaluated many projects involving innovative uses of telecommunications. Lewis received his Ph.D. in Political Science from the Maxwell School of Citizenship and Public Affairs at Syracuse University, and has taught at both Auburn and Syracuse Universities as well as at the U.S. Air Force Air University.

Copies of *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs* (264 pages, softcover) are available for $45 each from the Center for Learning and Telecommunications, One Dupont Circle, Suite 600, Washington, DC 20036. Visa and Master Charge payments accepted. Bulk [illegible] also are available. Or use the cou[illegible] on page 11 to order.

AUDIOSCAN

Articles, books, programs and projects involving the uses of audio technologies.

Radio

Gladstone, Brooke. **"What Native Americans Want to Hear."** *Current*, December 24, 1982, pp. 1, 3. An analysis of a programming study conducted by public broadcasters on Native American programming needs that might be met through an interconnected radio system.

Telephone

"NASA Eyes Mobile Telephone Service for Rural America." *Broadcasting*, December 6, 1982, p. 60. A report on a petition filed by the National Aeronautics and Space Administration to bring mobile satellite telephone service to rural areas.

Teleconferencing

Teleconferencing: A Practical Guide to Teaching by Telephone, by Ricki Ann Bronstein, Jack E. Gill, and Elmer W. Koneman. American Society of Clinical Pathologists. [Customer Services, Dept. TA69A, P.O. Box 12073, Chicago, IL 60612]. $15 plus $5 shipping.

A guide for educators planning and conducting telephone courses with emphasis on adapting traditional teaching formats to teleconferencing. This book provides details on budgeting, purchase of equipment, course delivery and evaluation.

Continuing Ed. Courses For Chemists Delivered By Teleconferencing

The American Chemical Society's continuing eduation program offered its first series of live teleconference courses taught by experts during March and April of 1983. Designed for chemists, chemical engineers, and other professionals, the five courses are transmitted nationwide by telephone conference call to participating sites.

An "open microphone" at each end allows interaction between students and their instructor. Slides and audio-visual support materials at each location further enhance the presentation. Course topics include: "The Effective Manager," "Chemical Engineering for Chemists," "Basic High Performance Liquid Chromatography," "Introduction to Gas Chromatography," and "Advances in the Physical Chemistry of Polymers."

Any group or organization in the United States or Canada is eligible to register as a site and may participate in as many courses as it chooses. Teleconference course fees range from $795 to $875 per site and are cost-effective because any number of participants can attend at each site.

For detailed site registration information, course schedules, and outlines, contact: Cyrelle Gerson, American Chemical Society, 1155 16th Street NW, Washington, DC 20036; 202/872-8728.

Inservice Project Uses Audioconferencing

After a year of feasibility study and collaboration among the University of Michigan School of Education, Wayne County Intermediate School District, and the Detroit Public Schools, a pilot project using instructional television and audio teleconferencing now delivers inservice development programs to teachers in Detroit and Ann Arbor.

The television signal originates from the classroom studio of the College of Engineering on the Ann Arbor campus and is broadcast over a telephone line to a transmitter in Detroit. From there, the signal goes by microwave over a 30-mile radius to eight strategically located Detroit high schools, previously identified for participation in a High School Improvement Project sponsored by the Ford Foundation. Each school is equipped with a portable audioconferencing kit to allow audio contact with the classroom studio as well as the other participating high schools through microphones and a telephone hook-up.

The topic, "Polishing Instructional Skills," represents a high priority inservice need for the Detroit teachers. The first two sessions were attended by more than 120 people at the nine locations. Initial reactions cited the ability to interact with the studio group as well as their colleagues at other sites as an important dimension of this delivery medium.

For more information, contact Michael Waggoner at the Professional Development Office, School of Education, University of Michigan, Ann Arbor, MI 48109; 313/763-9497.

VIDEOSCAN

Articles, books, programs and projects involving the uses of video technologies.

Broadcast Television

The Place of Educational Broadcasting in the Pre-Service Training of Teachers, by J.F. Murray. *Journal of Educational Television*, Vol. 8 (1982), 187-96.

For several years the Scottish Council for Educational Technology (SCET) has tried to identify strategies that would encourage widespread use of broadcast resources in Scottish education.

Two examples described in this article focus on preservice education in colleges of education. It is assumed that early exposure to educational technology will motivate teachers to use it later in the classroom. Since there was no real policy regarding broadcast resources in preservice training, and since practices varied widely among colleges, SCET adopted a seminar approach directed at subject departments within colleges.

At Moray House College of Education, SCET sponsored seminars on the workings of broadcast organizations, materials available for use in primary schools, language arts, mathematics, environmental studies, and music. Participants rated the seminars very useful and thought that broadcasting was sufficiently important to warrant a departmental policy.

A second exercise concentrated on secondary subject departments at the Aberdeen College of Education. Seminars were presented for the modern languages, English, mathematics, science, history, geography, and music departments. A wide range of topics was covered.

SCET concludes that college departments could gain much from instituting their own seminars to provide a focus of attention on broadcast resources.

"Educational Off-Air Marketing: A Study of 'Cosmos'." *The Videoplay Report*, January 3, 1983, pp. 1-5. A summary of a 405-page report on the off-air licensing of the television course, "Cosmos."

"Lots of Lottery Language." *Broadcasting*, November 22, 1982, pp. 42-43. A report on negative reaction to an FCC proposal to use a lottery to select among applicants for initial broadcast licenses.

Mermigas, Diane. **"PBS Outlets Hail Results of Ad Test."** *Advertising Age*, December 27, 1983, pp. 3, 17. A review of the results of the PBS advertising test.

"$1 Million Grossed in Ad Test So Far." *Current*, December 24, 1982, pp. 1, 4. A report on the progress of the public television ad test, costs, revenues, and audience reaction.

Reily, John. **"Low-Power TV—A Progress Report."** *E·ITV*, December 1982, pp. 60-62. An update on the progress of low-power television stations.

Salewski, Udo. **"Coming—A National Broadcasting Strategy for Canada."** *Cable Communications*, November 1982, pp. 14, 15. A review of a Canadian government strategy paper on measures to improve the national broadcasting system.

Sutton, Karen. **"Publicizing Telecourses—A Shoestring Budget."** *National Society for Performance and Instruction Journal*, December 1982, pp. 29-31. A profile of Vincennes University's efforts in publicizing telecourses.

Penn State, Hospital Council Cooperate on Use of Video

Pennsylvania State University and the Hospital Council of Central Pennsylvania plan to expand the use of telecommunications technology in bringing health information and health education courses and programs to institutional members of the council.

The signing of a cooperative agreement formalizes the commitment of both the Hospital Council and the university to maximize the use of video technology as one means of meeting the diverse educational needs of health care professionals.

The Hospital Council and Penn State will work together to develop proposals and other financial support to fund new initiatives in the field.

Contact Marlowe Froke, general manager, Learning and Telecommunications Service, J. Orvis Keller Building, Pennsylvania State University, University Park, PA 16801; 814/865-5430.

Cable Television

Allen, Charline. **"Franchise Wars Grinding From a Bang to a Fizzle."** *CableAge*, January 3, 1983, pp. 11-14. A view of multiple systems operators' withdrawal from cable franchising because of escalating demands by municipalities.

Albert, Michael S. **"Can DBS and Cable Coexist?"** *Cable Television Business*, November 15, 1983, pp. 128-32. A discussion of competition for cable subscribers posed by direct broadcast satellites.

Buske, Sue Miller. **"Developing Access Center Rules and Procedures."** *Video User*, January 1983, p. 21. A guide to elements that need to be incorporated into operating rules for cable access centers.

"Cable: Coming to Terms With Adulthood." *Broadcasting*, January 3, 1983, pp. 74-77. A discussion of developments affecting the future of the cable industry.

Danna, Sammy. **"From Cloisters to Cable by Satellite."** *E·ITV*, January 1983, pp. 58-66. A profile of the Eternal Word Network, a satellite-delivered cable network for religious programming.

Fielding, K.R. **"Choosing A Staff for Local Access."** *E·ITV*, December 1982, pp. 72-79. A guide to selecting staff for cable access channels.

Gelman, Morrie. **"Information Called Key to Cable Future."** *Electronic Media*, December 2, 1982, pp. 1, 20-21. A view of cable TV's future in providing home information services such as teletext and videotext.

Grillo, Jean Bergantini. **"Attitude Tracking."** *CableVision Plus*, December 20, 1982, pp. 16-22. An examination of research trends within the cable industry to collect more refined data on subscribers.

Grillo, Jean Bergantini. **"Competition Spurs 'Local O'."** *CableVision*, November 22, 1982, pp. 131-41. A profile of several cable systems offering local origination programming.

Grillo, Jean Bergantini. **"QUBE Anniversary."** *CableVision*, December 13, 1982, pp. 27-28. An examination of the development of QUBE interactive cable system in its fifth year of service.

"Hearing Aid." *CableVision*, December 6, 1982, p. 23. A report on a new service providing hearing-impaired viewers with captioning for cable sports broadcasts.

Kwiatek, Kathy Krendl. **"New Ideas in the Workplace: Learning From Interactive Television."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 117-29. An analysis of data collected on inservice teacher training via cable television.

Livingston, Victor. **"Beyond Entertainment."** *CableVision*, November 22, 1982, pp. 142, 147-53. A look at two cable institutional networks serving schools and colleges in California.

"New Jersey Link." *CableVision*, November 22, 1982, p. 73. A report on a statewide cable system in New Jersey having ad-supported educational programming.

Roth, Cliff. **"Cable TV Hubs Simplify Switching."** *High Technology*, January 1983, pp. 15-18. A look at advancements in cable technology that will affect the distribution of television signals.

Rothbart, Gary. **"Franchising."** *CableVision*, December 17, 1982, p. 35. A review of franchising activity across the country.

"Winning Ways." *CableVision*, November 22, 1982, pp. 67-68. A review of research on cable's role in changing television viewing behavior.

Legal/Regulatory Issues

"Broadcasters-Cablecasters Come Together Over Copyright." *Broadcasting*, December 5, 1982, pp. 37-39. A review of testimony in the Senate on the cable copyright bill.

"Cable Industry Mounting Counterattack on CRT." *Broadcasting*, November 22, 1982, pp. 24-25. A report on the National Cable Television Association's request for a stay on implementation of the Copyright Royalty Tribunal's rate increase.

"FCC Extends Tax Break Plan for Minorities to Cable." *Broadcasting*, December 6, 1982, p. 42. A discussion of an FCC ruling to allow tax breaks as an incentive to encourage minority ownership of cable systems.

Hill, Arthur. **"High Drama in Washington."** *Cable Television Business*, January

15, 1983, pp. 58-64. A look at major events that affected the cable industry in 1982 and issues to be resolved in 1983.

Hill, Arthur M. **"How Operators Can Help Lobbyists."** *Cable Television Business*, December 1, 1982, pp. 22-24. A report on the efforts of cable lobbyists to influence the political process at the local, state, and federal levels.

Witt, Gary and Craig Leddy. **"Special Report: Copyright."** *CableVision*, December 20, 1982, pp. 23, 24, 30. A series of articles on cable copyright legislation, industry compromises, court arguments, and proceedings before Congress.

Videotext/Teletext

Setting the Videotex(t) Stage, by David Stoller. *CableVision Plus*, December 6, 1982, pp. 4-14.

The future of videotext is discussed by both proponents and skeptics. Predictions on the market size for videotext services by 1990 range from $1 billion to more than $10 billion. Wall Street analysts and market researchers from business and academe offer varying opinions.

Most agree that a viable videotext market will develop; they disagree on which companies and types of services will succeed and when. They also agree that cable television and the telephone industry will share in the profits, and that personal computers will play a major role in heightening consumer awareness and demand for videotext-like services.

Issues of concern include: regulatory standards (e.g., the AT&T-designed Presentation Level Protocol), cost-effectiveness, consumer acceptance for such things as home banking, and "user-friendly" design. It is generally agreed that the industry won't reach maturity for at least 10 more years.

In any event, four major groups will divide potential revenues: system carriers (e.g., telephone and cable companies and broadcasters), system operators (e.g., Times Mirror, CompuServe), packagers (the companies putting information into distinct services), and information providers (those companies with information or services to sell).

Behrens, Steve, **"Teletext Worth Buying, Say Half of Trial Users."** *Current*, December 10, 1982, p. 3. An examination of user reactions to the WETA (Washington, D.C.) teletext field trial.

"Global Gathering." *CableVision*, December 13, 1982, pp. 143. A report of panelists' views of the viability of electronic publishing, from a forum examining the effects of several new media.

Mermigas, Diane. **"Advertisers Try Videotext, but Await Data."** *Advertising Age*, December 6, 1982, pp. 24, 50-51. A look at several advertisers awaiting research findings from videotext experiments before investing in this enterprise.

Moozakis, Chuck. **"What Subscribers Want from Videotext."** *TVC*, November 15, 1982, pp. 68-72. A discussion of the questions and issues confronting the development of videotext services.

Sherrid, Pamela. **"Publishing."** *Forbes*, January 3, 1983, pp. 218-19. A description of electronic publishing systems and their advertising potential.

Stoller, David. **"Gutenberg's Cable Progeny."** *CableVision*, November 22, 1982, pp. 153-63. A look at several publishing ventures into electronic newspapers in cooperation with cable systems.

"Study Predicts Text Service Revenues to Top $400 Million by Next Decade." *Broadcasting*, December 6, 1982, pp. 74-76. A review of a report on the electronic publishing market predicting large advertising revenues for videotext and teletext.

"Viva La Teletext." *Broadcasting*, December 6, 1982, p. 74. An announcement of several French firms forming a sales and promotion company in the U.S. for videotext and teletext services.

"Taft and Zenith Become Teletext Partners?" *Broadcasting*, January 10, 1983, pp. 36-37. An announcement of plans by Taft Broadcasting to broadcast a teletext magazine with Zenith Radio Corporation providing decoders.

"Videotext Test Tracks Usage." *Broadcasting*, January 10, 1983, p. 98. A report on a French videotext experiment that suggests mass-marketability for informational and transactional services.

Research Program on Broadcast Teletext. Alternate Media Center, New York University School of the Arts [725 Broadway, New York, NY 10003]. For individual titles and prices contact Mark Siegeltuch at 212/598-2852. 1982.

A series of eight working papers on the results and analysis of the WETA Teletext field trial in Washington, D.C.

Satellites

Adams, Michael J. **"Satellites: Focus On European Standards."** *Broadcast Engineering*, November 1982, pp. 68-72. A discussion of plans for a pan-European satellite broadcasting service.

Cohen, Nathaniel L. and Gordon R. Stone. **"DBS Platforms: A Viable Solution."** *Satellite Communications*, December 1982, pp. 22-25. A discussion of design options for direct broadcast satellite systems offering enhanced services and lower costs.

Livingston, Victor and Gary Rothbart. **"Krisbergh and Galesi."** *CableVision*, December 12, 1982, pp. 14-18. An interview with executives from United Satellite Television about the company's plans for DBS services.

Reinhardt, Edward E. **"Three is Not Enough: Why the U.S. Specified Four DBS Service Areas."** *Satellite Communications*, December 1982, pp. 28-39. An explanation of the need for the four service area/four orbital slot allotment versus the three service area plan.

Tillson, William H. **"Satellite Facilities In and Around the Bay Area."** *Satellite Communications*, December 1982, pp. 46-48. A listing of satellite facilities in and around the San Francisco area.

"U.N. Resolution Would Limit Distribution of DBS Signals." *Broadcasting*, November 29, 1982, pp. 30-31. A report on a U.N. resolution to bar direct broadcast satellite transmissions across international boundaries without prior consent.

Videodisc

Museums and the Videodisc Revolution: Cautious Involvement, by Alexander Lee Nyerges. *Videodisc/Videotex*, Fall 1982, pp. 267-74.

The wide-ranging potential for using videodisc technology in museums is discussed in this article, including: archival information storage and retrieval systems, exhibit presentations, exhibit and collection catalogs, educational programming, exhibit design, and fund-raising. Other applications are possible once videodisc and computer technology is further defined.

In spite of the potential and the in-process projects, there are many reasons for some museums to be reluctant to get involved. Among the problems are cost of videodisc production, technological drawbacks (such as lack of high-resolution monitors), lack of clear examples, storage capacity, rapid random access, interactive capability, and conservation.

Several projects underway are described, including those at the Boston Museum of Fine Arts, which captures still images of art and art objects on videodisc; the art school slide library at the University of Iowa; and the clothing and textile collections at various sites of Oregon State University. Other projects cited here in directory format include those at the National Gallery of Art, International Museum of Photography (Rochester, N.Y.), Public Archives of Canada, National Geographic Society, National Air and Space Museum, Chicago Museum of Science and Industry, Academy of Natural Sciences of Philadelphia, National Academy of Western Art, Metropolitan Museum of Art, National Park Service, and the Lyndon B. Johnson Museum (Austin, Tex).

"For 1983, the Videodisc Forecast is Bright." *Videoplay Report,* December 20, 1982, pp. 1-6. A discussion of optimistic projections for videodisc sales in the coming year.

Gupta, Udayan. **"Increased Demand Predicted For Special Videodisc Programs."** *Electronic Media,* November 25, 1982, p. 8. A review of a study that predicts increased demand for interactive and special-interest programming on videodiscs.

Gupta, Udayan. **"Videodisc Manufacturers Continue to Expand Products."** *Electronic Media,* December 2, 1982, p. 10. A report on new videodisc products and services planned by two major manufacturers of discs.

"It's Not a Videodisc Nor A Magnetic Disk Nor a Digital Disk . . . It's a Mnemos Disk!" *Monitor,* December 1982, pp. 6-8. A description of a hybrid disk technology, combining optical disk and microform.

Jarvis, Stan and Steve Booth. **"A Century of Optical Disc Development."** *Videodisc News,* November 1982, pp. 13-15. A history of the development of videodiscs, focusing on the work of John Dove in optical recording.

Silverstein, Jeffrey J. **"England's First Interactive Training Videodisc."** *Videodisc News,* December 1982, pp. 12-14. A profile of the development of the first interactive training disc designed for the British medical community.

"Videodisc Projects Directory." *Videodisc/Videotext,* Fall 1982, p. 295. A compilation of the applications of videodisc and optical disc technology in the public and private sectors.

Videodisc Transmission Is Public Television First

Under the terms of a cooperative project between the National University Consortium (NUC) and Pioneer Video, Inc., the Maryland Center for Public Broadcasting is the first in public television to use videodisc technology as the point of origin for regular broadcast. Members of the consortium are conducting a four-month study to evaluate the distribution of NUC courses on videodisc as well as instructional applications of the technology.

The Pioneer videodisc player will be used for regular broadcast of NUC video programs and as an interactive learning aid for individual students and small groups on college campuses, in corporate offices, and at military installations. Although NUC courses are not currently designed to be interactive, the program materials used in the study are encoded to divide the program into "chapters." This feature gives students and instructors easy access to particular topics for review and discussion. NUC hopes to take further advantage of the interactive capabilities of videodisc technology in the development of new courses.

The subject of the NUC/Pioneer videodisc project is "Exploring Language: Thinking, Writing, Communicating," a six-credit course in composition and linguistics developed by the National University Consortium. The instructional package for "Exploring Language" includes required reading and writing assignments and eight half-hour television programs to augment and motivate student learning.

The feasibility study will, according to Allan Hershfield, executive director of the National University Consortium, provide a basis for comparison between satellite and videodisc distribution. By experimenting with videodisc, NUC can evaluate the cost-effectiveness of its current system of satellite transmission to public television stations and videocassette distribution to cable systems. A number of costs now incurred by this system (e.g., satellite receiver time, tape stock, and engineering time to record satellite transmissions, and environmentally controlled storage space for videotapes) would be eliminated. Videodiscs can be produced in quantity at minimal cost. Their high-quality image and sound will not deteriorate with heavy use. Discs also require less storage space and are not restricted to climate-controlled environments. The results of this study will have major implications for both public and private broadcast stations and will also have an impact on the use of videodisc technology in higher education.

For more information, contact Allan Hershfield, NUC, University College, University of Maryland, College Park, MD 20742; 301/454-6627.

Videotape

"Annual Directory of Program Sources." *E·ITV,* December 1982, pp. 35-38. A listing of companies, schools, individuals, and others who rent or sell video programming.

"VideoIndex '82 Hardware Buyer's Guide." *Video Systems,* November 1982, pp. 25-67. A directory of manufacturers, dealers, and distributors of video hardware.

"Videotape and Computers in Cardiology." *E·ITV,* December 1982, pp. 80-82. A description of a cardiovascular diagnostic system using videotape images of a patient's heart in action as well as computer analysis of its physical structure.

Teleconferencing

Brown, Adele Q. **"Assessing Videoconferencing for Your Meeting."** *Video User,* December 1982, pp. 8, 24. A guide to determining whether or not an organization should use videoconferencing for meetings.

DeBaldo, Paul. **"Video Teleconferencing: Improved Communications and Decision-Making."** *Telecommunications,* January 1983, p. 82. An examination of videoconferencing as a cost-effective, convenient, time-saving means of communications.

Galdi, Vincent. **"Teleconferencing Scores High Grades on Effectiveness."** *Video User,* November 1982, pp. 1, 18. An analysis of a survey conducted by the International Association of Business Communicators rating the effectiveness of teleconferencing.

"How Massachusetts Mutual Went All Out." *Video User,* January 1983, p. 14. A chronicle of an insurance company's first videoconferencing effort which was produced in-house.

"Videoconferences: The Forum of the Future." *Graduate Woman,* November/December 1982, pp. 28, 40. An explanation of videoconferencing and its uses by for-profit and nonprofit institutions and organizations.

Walsh, Mary Ann. **"Somewhere, I Missed the Point."** *E·ITV,* January 1983, pp. 22-26. A critique of a videoconferencing demonstration that was designed to introduce various aspects of the technology.

Teleconferences Feature Education, Health Issues

The Public Service Satellite Consortium (PSSC) recently coordinated video teleconferences for Ohio State University, the American Hospital Association, and the American Urological Association. PSSC is a nonprofit organization that provides video teleconferencing and telecommunications consulting services to organizations in the fields of health and medicine, education, law, library science, religion, and public telecommunications. A for-profit subsidiary, Services by Satellite Inc. (SatServ), offers similar services to corporate clients.

A four and one-half hour teleconference produced by the Ohio State public television station, titled "The Use of Microcomputers in Education," was transmitted from Columbus to 17 receive sites in the United States and Canada via the Westar IV satellite. A land-line carried the signal from Buffalo, N.Y., to Toronto, where it was uplinked to the Canadian Anik B satellite. Forty other sites viewed the telecast but did not have facilities for interaction. About 2,000 participants at the 17 interactive receive sites also had the opportunity to communicate by computer terminal. It was the first teleconference allowing participants to exchange ideas in this way. The teleconference was developed by the University Council for Educational Administration and the Dean's Network—two organizations based at OSU—and by the OSU College of Education.

AHA transmitted a three-hour teleconference on "Immunization Programs for the Prevention of Hepatitis B Virus," from the Media Center of AHA headquarters in Chicago to more than 30 public television stations, hotels, and hospitals in the United States. The audience was composed of hospital administrators, physicians, and nurses. The interactive program was a two-part panel presentation on hepatitis, preventative vaccines for the disease, and immunization programs. The vaccine firm of Merck, Sharp and Dohme provided funding for the teleconference.

PSSC also coordinated a two-day video teleconference on prostate cancer for the American Urological Association. Transmitted from the BizNet studio of the U.S. Chamber of Commerce in Washington, D.C., urologists and other medical professionals viewed the interactive program at 21 hotels, public television stations, and hospitals around the country. Local workshops were held in conjunction with the teleconference.

COMPUSCAN

Articles, books, programs and projects involving the uses of computer technologies.

Computers

Some Policy Issues in Computing Education in England and Europe, by Patrick G. Raymond. *T.H.E. Journal,* January 1983, pp. 95-99.

Several of the policy matters considered in England regarding computing education are presented and compared with different solutions that have evolved in other European countries. Two factors seemed to have influenced the direction policy has taken in a country: the political control of the education system (local autonomy vs. national control), and the degree to which postsecondary education and vocational education are related.

Among the situations described are the $16 million Micro-electronics Education Programme (MEP) and the money made available by the British government to supply a microcomputer to every secondary school. Unlike England, France has adopted the policy of putting a number of micros into a few selected schools.

At the postsecondary level, there are a variety of courses throughout Europe in computer studies, management informatics, etc. Most of them involve understanding hardware and software engineering concepts, exposure to programming, systems of software, and database and teleprocessing. There is some disagreement on the supporting curriculum to be offered. A major gap in the current provision of courses has been caused by the sudden explosive growth of office technology, as well as problems related to financing computing education courses and keeping trained instructors.

One study shows that there is a closer correlation between language ability and programming achievement than between math and programming. It seems to be agreed that vocational computing courses, however, need a content of business studies.

Beiser, Karl. **"Microcomputer Periodicals for Libraries."** *American Libraries,* January 1983, pp. 43-48. A guide to the variety of periodicals on microcomputer technology and its applications.

Bruce, Robert C. **"Anchors Away—the Navy Applies CAI."** *Electronic Education,* January 1983, pp. 9-11. A profile of computer-assisted instruction at the Naval Technical Training Center in Pensacola, Florida.

"Computers in Classrooms: Teachers Must Use With Care." *Cleveland State University Quarterly,* Fall 1982, p. 4. A commentary that warns against the misapplication of computer technology by educators.

English, Randall. **"We Will Be Disappointed With the Computer."** *Electronic Education,* January 1983, pp. 24, 38. A commentary on the disappointment to be faced by educators expecting computer technology to revolutionize education.

Farrow, Steven B. **"A Computer-Aided System for Generating Multiple-Choice Examinations."** *Engineering Education,* January 1983, pp. 308-10. A description of a computer program to help faculty construct and generate examinations.

Friedrich, Otto. **"The Computer Moves In."** *Time,* January 3, 1983, pp. 14-24. An examination of the computer as the most significant force in 1982, including profiles of computer applications in medicine, education, business, etc.

Gladstone, Brooke. **"Micros Lure Education Funds."** *Current,* November 26, 1982, pp. 1,2. A review of Department of Education funding for educational technology projects with an emphasis on microcomputers.

Hedberg, Augustin. **"Choosing the Best Computer for You."** *Money,* November 1982, pp. 68-117. A description of the principal uses of personal computers, a review of 36 machines, and a guide to choosing among them.

Kearsley, G.; B. Hunter; and R.J. Seidel. **"Two Decades of Computer-Based Instruction Projects: What Have We Learned?"** *T.H.E. Journal,* January 1983, pp. 90-94. An examination of 50 major projects in computer-based learning.

Kent, Karen. **"California Moves Ahead With Computer Education."** *Classroom Computer News,* November/December 1982, pp. 32-70. A profile of a California development program to train teachers for using computers.

Mayhew, Deborah. **"Tomorrow's Technology: An Owner's Manual."** *Graduate Woman,* November/December 1982, pp. 14-16, 37. An overview of the development of computer technology and its possible impact on the future.

Pulat, Babur Mustafa. **"The Effectiveness of Computer-Aided Instruction in Mathematics."** *Engineering Education*, January 1983, pp. 319-20. A study of the effectiveness of computer-aided instruction at North Carolina A&T University.

Shell, Ellen Ruppel. **"The Brain Behind BASIC."** *Technology Illustrated*, December/January 1983, pp. 83-90. A profile of John Kemeny, designer of computer time-sharing and BASIC language.

"The Hardware Dilemma: Which System . . . and Why?" *Electronic Learning*, January 1983, pp. 51-64. A guide to 24 microcomputers used for applications such as computer awareness, computer-assisted instruction, and administrative functions.

Trifari, John. **"Computer Disks: Capacity Soars, Costs Plummet."** *High Technology*, January 1983, pp. 47-53. A report on innovations in computer disk technology.

Williams, John M. **"When His Computer Talks He Listens."** *Electronic Education*, January 1983, pp. 32-33. A look at a microprocessor with speech capability to aid the visually handicapped.

Wise, Deborah. **"Personal Computer Brings Telecommuters Home."** *InfoWorld*, December 6, 1982, pp. 55. A discussion of the prospects for office workers to use computers to work in their homes.

Campus Computing Strategies, John W. McCredie, ed. Digital Equipment Corporation, Order Fulfillment Department [12-A Esquire Road, Billerica, MA 01730]. 1983. 309 pp. $21.

A collection of 10 case studies from leading colleges and universities on their underlying strategies for the implementation of computing and communications systems. This book evolved from a study conducted by EDUCOM in 1981-82.

Information Systems and Technological Decisions: A Guide for Nontechnical Administrators, by Robert L. Bailey. AAHE-ERIC/Higher Education Research Report No. 8, 1982. American Association for Higher Education [One Dupont Circle, Suite 600, Washington, DC 20036]. $5 for AAHE members, $6.50 for nonmembers.

A primer for higher education administrators on the new technologies, trends affecting decision-making, and examples of cost-effectiveness and efficiencies of information systems. This book reviews computer software and suitable systems for institutional needs.

1983 Classroom Computer News Directory of Educational Computing, Peter Kelman, ed. Intentional Educations, Inc. [341 Mt. Auburn Street, Watertown, MA 02172]. 1982. 200 pp. $14.95 softcover, $29.95 hardcover.

A compilation of organizations, projects, funding sources, publications, user groups, and hardware and software information. This directory also includes a section devoted to colleges and universities with courses and degree programs in educational computing/computer science.

Computer Series Airs on PBS

The impact of the computer on society is an issue that should concern everyone. Despite all this attention and interest, the computer remains a mystery to many people. Answers to questions about the computer can now be found in "The Computer Programme," a 10-part series premiering this spring through the PBS Adult Learning Service. "The Computer Programme" examines many technological changes already in effect, speculates on future changes, and gives the viewer practical suggestions for understanding the computer and using it effectively in daily tasks. Through demonstrations, onsite visits, animation, and commentary by experts, the series presents practical and theoretical information valuable to people in many different areas of work and study.

Key topics discussed in the series include the development of computers and of the current computer revolution; the concept of a computer program as a series of instructions; the binary number system used by microcomputers; what a computer program is and how we communicate with the machine; information storage; the effects of computers on communications; computer graphics, computer-generated sound, and voice recognition; the world of computer games and simulations; artificial intelligence; and the impact of computers on society.

The BBC production, distributed in the United States by Films Incorporated, will be offered through the PBS Adult Learning Service to business, industry, schools, colleges, and other organizations for off-air taping beginning this spring. Colleges and universities also will be able to offer the series as a complete college-level course or continuing education program through cooperating public television stations. Print materials, including a text, student study guide, and faculty manual, make this series appropriate for college students, teachers, high school students, and workers and professionals in a variety of fields.

PBS Adult Learning conducted two teleconferences to introduce stations and colleges to the series, showing clips from the series and discussing how stations, colleges, and other organizations can use this series to respond to the tremendous need for better information about computers.

Information on the series, off-air taping, and television course licensing arrangements can be obtained from the PBS Adult Learning Service, 202/488-5360, or from the adult learning liaison at local public television stations.

Contest Applies Computer Games to Education

Verbatim Corporation, manufacturer of flexible computer disks, is sponsoring an innovative contest as a public service to advance students' knowledge of computer technology. The Computer Ed-Game Challenge is a three-month competition to develop high quality educational software that is informative, imaginative, entertaining, and nonviolent for use at all levels of learning. The contest is open to teachers, professionals, and students, and will be administered by two leading organizations in the educational computing field, CONDUIT and MicroSIFT.

These nonprofit groups, involved in the review and evaluation of educational software programs for use in elementary, secondary, and postsecondary schools, developed the contest format. "Today, the biggest barrier to effective instructional computing is the lack of high quality curriculum materials. This contest is a unique vehicle for generating lively, interesting teaching aids that deal with nontrivial subject matter," notes Hal Peters, director of CONDUIT, an amalgam of college computer groups affiliated with the University of Iowa.

Twenty contest categories cover a variety of academic subjects such as mathematics, language arts, science, health, nutrition, social studies, and business in three educational divisions: elementary, secondary, and postsecondary. All entries must be submitted on a 5¼-inch minidisk or data cassette and designed on any one of a number of popular microcomputers currently used extensively in educational systems throughout the world. These include Apple, Atari, Commodore, IBM, Texas Instruments, Radio Shack, and Sinclair models.

Verbatim will duplicate disks containing the best entries for distribution after the contest closes. In this way students and educators can benefit from this nonprofit endeavor even if they do not participate in the contest. To encourage participation, Verbatim offers the first 2,500 entrants two free minidisks. Royalties will be paid to those whose entries are selected and distributed worldwide by contest organizers.

Information and contest pamphlets containing details about entry requirements, rules, categories, judging criteria, and guidelines for game authoring, can be obtained by calling toll-free (1) 800-221-4052 (In Oregon, call 248-6800), or by filling out a card at participating Computerland stores. Written requests should be directed to Computer Ed-Game Challenge, P.O. Box 388, Iowa City, IA 52244.

Interactive Video

Laurillard, Diana M. **"The Potential of Interactive Video."** *Journal of Educational Television*, Vol. 8 (1982), 173-80. A study of an instructional package combining computer-assisted learning with videocassettes, its education implications and problems.

Troutner, Joanne. **"How to Produce an Interactive Video Program."** January 1983, pp. 70-75. A guide to creating programs using video and microcomputer technology as an interactive learning system.

MACROSCAN

Articles, books, resource documents, programs and projects involving the uses of combined technologies.

Behrens, Steve. **"Annenberg Project's Strategy: Open to Ideas or Unfocused?"** *Current*, December 10, 1982, pp. 1,5. A critical look at the grantmaking process for the Annenberg Project at CPB.

Fowler, Mark S. **"Unregulation: Achievements and Future Prospects."** *Broadcast Engineering*, December 1982, pp. 56-60. A discussion of technologies that have been "unregulated" by the FCC.

Hansen, Desna Wallin. **"User-Controlled Technologies in the Humanities."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 131-42. An examination of resistance to instructional technology and ways in which user-controlled technologies are being used in the humanities.

Pool, Ithiel de Sola. **"The Culture of Electronic Print."** *Daedalus*, Vol. 111 (Fall 1982), 17-31. An examination of how electronic delivery of print will affect print culture.

"Preparing for High Technology." *Centergram*, September 1982, pp. 1-2. A review of three publications that deal with the role of postsecondary institutions in responding to industry's high technology training needs.

Miller, Jeff. **"Issues in Information Control."** *JCPenney Forum*, November 1982, pp. 22-23. An interview with Henry Geller on regulatory and policy issues confronting the new technologies.

Kressel, Marilyn. **"Higher Education and Telecommunications: What's Happening?"** *Electronic Education*, January 1983, pp. 15-16. A summary of applications of telecommunications for postsecondary education.

Rouse, S. and R. Lewis. **"Through the Gateway: Ten Years After."** *Journal of Educational Television*, Vol. 8 (1982), 197-202. An evaluation of student responses to a multi-media (including radio, television, and print) pilot course administered by the British Broadcasting Company in 1970.

Smith, Anthony. **"Information Technology and the Myth of Abundance."** *Daedalus*, Vol. 111 (Fall 1982), 1-16. A review of current developments in information technology within a historical setting to portray the phenomenon of technological transformation, its motivations, and cultural consequences.

"What's Happening in Telecommunications: Four Case Studies." *The Pennsylvania Connection*, Fall 1982, pp. 5, 6. An overview of four ongoing telecommunications programs in Pennsylvania involving cable and other means of video transmission.

Resources for High Technology. National Center for Research in Vocational Education, Ohio State University [1960 Kenny Road, Columbus, OH 43210; 614/486-3655]. Free.

A list of organizations providing information or conducting research on technological innovations. This brochure includes a brief statement of purpose for each organization, contact person, and publications available.

1983 Field Guide to Electronic Media, Michael Pollan, ed. Channels of Communication, Media Commentary Council, Inc. [1515 Broadway, New York, NY 10036.] 1983. 68 pp. $3, plus $2 postage.

An overview of the electronic media field. This magazine supplement describes the variety of technologies, their applications, and impact on popular culture.

CPB/Annenberg Project Revises Solicitation Procedures

During its first year, the Corporation for Public Broadcasting's Annenberg School of Communications Project provided support to 12 programs and projects to:

- demonstrate the use of telecommunications systems for addressing unique higher education problems by exploring instructional design and using new technologies in a manner replicable in other settings;
- create one or more significant collections of new, innovative, high quality, college-level materials to encourage more Americans to participate in higher education by removing obstacles such as constraints of time and financial resources.

Up to $10 million will be spent on this year's round. The project has instituted a two-step process for the submission of proposals. Preliminary applications, to be no more than eight pages, will be accepted any time until 5:30 p.m. on Friday, June 24, 1983. These proposals are to be evaluated and acted upon within four months from submission. Full proposals will be accepted only from those invited to submit them.

All projects submitted for consideration must meet the following general criteria:

- innovate, complement, or improve, but not duplicate what already exists
- hold promise of making significant contributions to advancing one or both goals of the CPB/ASC Project
- develop imaginative approaches for which sufficient funds are unlikely to be available from other sources
- include ongoing evaluation during the development and production of the materials of demonstration projects

For complete solicitation guidelines and a listing of projects already funded, contact CPB/Annenberg Project, 1111 16th Street NW, Washington, DC 20036; 202/293-6160.

Community Groups Guide TV/Radio Education Project

The Extended Uses for Television and Radio Productions is a project funded by the Corporation for Public Broadcasting and sponsored jointly by the Coalition of Adult Education Organizations and the National University Continuing Education Association. This national project, directed by Diane Eisenberg, introduces the full spectrum of local adult education organizations to the largely untapped potential of existing TV and radio productions as programming resources in their informal adult learning programs.

In the first phase of this project, 1,200 planners of adult educational activities received questionnaires to assess the interest in and use of broadcast materials for informal adult learning. The responses will help to determine what barriers, if any, exist to the more extensive use of TV and radio programs. Project staff consult with major producers and distributors of educational media programs to identify previously broadcast productions that can be made readily and economically accessible to community outreach programs.

This spring, adult education providers from a broad range of community groups (such as libraries, churches, museums, two- and four-year colleges, senior centers, labor groups, YWCAs, public TV and radio stations) will participate in roundtable discussions in four regional locations. Participants will examine the "extended uses" concept, such as collaborative acquisition alternatives, and suggestions for innovative formats for informal community programs based upon existing TV and radio resources. The four roundtable sites to be hosted by local affiliates of national adult education organizations are:

- AFL-CIO, in Dallas
- Craft and Folk Museum, in Los Angeles
- Minneapolis Public Library
- Winchester Council on Aging, in Winchester, Mass.

The needs of adult educators, as reflected in the questionnaires and the roundtable discussions, will decide activities for Phase II of the project.

For further information about the project and the regional roundtables, contact Debbie Wolfe, project coordinator, NUCEA, One Dupont Circle, Suite 310, Washington, DC 20036; 202/429-0612.

Making Room for New Technologies

continued from page 1

cations technology than presently exists.

- Satellite firms, by the year 2000, could provide between 22,000 and 48,000 channels for television, voice, and other communications.
- Teleconferencing is expected to grow at a rate of between 20% and 40% during the next few years and can eliminate by the end of the decade much of the enormous money now spent on executive travel time.
- An optical fiber one-fifth the size of a hair, can carry 10,000 telephone messages or 8,000 TV channels.
- Some $30 billion was spent on communications technology in 1980 and is expected to reach $150 billion by 1990.
- Computers that will fit inside a shoe box have more power today than room-sized computers had a decade ago.
- A new computer theory, being developed at the University of Mississippi, could, during the coming decade, make it possible to build a "chip" cube the size of two human hairs that is capable of storing all of the world's knowledge.
- Satellite and cable-based newspapers are a reality. Some observers predict a dramatic decline in the use of paper in communications.
- By the year 2000, 67% of the American work force will be employed in education-information industries.

No segment of our lives will remain untouched by these and other technological developments. I believe there is plenty of room for all technological developments, and each will present many enriching opportunities for the sale of equipment and services. DBS will not "kill" cable. Neither DBS nor cable will "kill" the market for home satellite terminals. We will see dramatic changes in the mix of communications, with less use of paper and more use of the airwaves. Satellites and satellite receivers are the key elements that will make it all happen.

The greatest opportunities will come to those individuals who begin now to think in future terms. Cable operators must consider the vast market available in SMATV [satellite master antenna television] (there are some 28 million apartments in this country, many yet unwired), the market available in institutions such as hospitals, colleges and universities, banks and industry groups which will look for wire interconnections for computer and data links. The market for home and commercial satellite receivers will increase dramatically as churches, banks, radio stations, chambers of commerce, colleges, and professionals such as doctors, lawyers and accountants seek

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to share data and continuing education opportunities. Home security, emergency services, local advertising, utilization of data channels and other applications which will meet the needs of the homeowner as well as the businessman are in cable's early future. The Qube system in Columbus, Ohio; the growth of teletext programing; profitable local advertising in systems from New York to California and systems providing data interlinks for corporate offices in major markets are just a glimpse of tomorrow.

Low-power TV will carve its niche for specialized audiences while radio stations will be enriched by greater use of satellite services and more local programing.

Cellular radio will expand the mix of services in a tremendous new market that is projected to produce revenues of up to $15 billion by the end of this century.

Preparing for the information civilization will require a new commitment that bridges business and industry, education and government. It must reach from corporate board rooms to elementary school classrooms to the halls of the Congress and the White House. First, we must reorder the educational programs of the nation to provide future generations with the knowledge of science and math that will be necessary to function in both the business and the home of the future. Corporate officers must concentrate both on the development and the application of technology elements, not as single systems, but as compatible and integrated systems with applications in many sectors of society. Government policy must focus its support in reordering educational programs of the nation, and industry must join the focus in corporate giving efforts and by providing corporate expertise in the planning.

To address the problem of providing industry leaders with a broader range of skills, the University of Mississippi is proposing the establishment of a Center For Future Communications Technologies. The center will incorporate an interdisciplinary program concept giving students an opportunity to gain engineering, management and marketing, sales and communications, journalism and broadcasting skills. The goal is a program that will provide leaders with all of the skills needed to develop, understand and apply communications technology throughout society. The communications industry will be asked to provide the financial support for development of the program, to share executives as planners and visiting lecturers, to provide equipment, cooperative educational programs for students, and employment opportunities for future graduates. The program is the joint effort of engineering, business, journalism-broadcasting faculty, and industry leaders.

For those who dream ahead and begin today to expand the application of current technologies, the rewards will be great. Those who fail to dream and refuse to expand the application of these technologies, the marketplace will leave behind.

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Periodicals

Abstracts and bibliographies appearing in this issue of *TELESCAN* cover the period between November 15, 1982 and January 15, 1983. Below is a list of periodicals reviewed for this issue that do not appear in our original list of publications (September/October 1981):

Centergram
The National Center for Research in Vocational Education
Classroom Computer News
Intentional Educations, Inc.
Cleveland State Quarterly
Cleveland State University
Daedalus
American Association of Arts and Sciences
Graduate Woman
American Association of University Women
JCPenney Forum
J.C. Penney Company, Inc.
Money
Time, Inc.

Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

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ERIC Clearinghouse on Higher Education
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Public Broadcasting Service
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MAY/JUNE 1983

The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUE 11

Cable TV: Wiring for Abundance

An article by Les Brown, reprinted from the "1983 Field Guide to the Electronic Media," published by *Channels of Communications*, November/December 1982.

CABLE. The word is so prosaic it is no wonder the technology took more than 30 years to catch the nation's fancy. Had cable television developed in urban rather than rural areas, with guidance from marketing experts, it might have been named for what it uniquely provides, rather than for a thick wire, its main technical component. We might speak today of *magnavision* or *wondervision* when referring to this form of television, since it has vastly increased the yield of our home receivers.

Cable is a video cornucopia whose gifts include a multitude of channels (upwards of 100 in state-of-the-art systems); an abundance of national program networks; a potential for local public access; a range of interactive services from video games to home security; a method of information retrieval from data banks; an electronic equivalent of the department store; and an ability to narrowcast to specific audiences, such as physicians and investment brokers.

Cable is more of everything. Beyond being just a television medium, it is also a communications network for a municipality. Many of the new cable installations link schools, libraries, hospitals, and police and fire departments for point-to-point communications. Nicholas Johnson, former member of the Federal Communications Commission, scarcely exaggerated when he observed that "the difference between ordinary television and cable is the difference between a garden hose and Niagra Falls."

Yet, for all this, there is still some confusion among consumers about this new kind of television. Many think they are cable subscribers because they pay monthly fees to receive movies and other premium fare over the air. But they actually are subscribing to forms of single-channel broadcast television—what we used to speak of two decades ago as pay-TV. Cable is something else; it is televison by wire.

As a technology, cable more closely resembles telephone than television. In fact, its wire—a coaxial cable—is strung along telephone poles or through underground telephone ducts and is connected, like telephone, to households paying a monthly charge for the basic service (usually in a range of $6 to $10). With some refinements in the technology—conversion to fiber optics, for example—the wire used for telephone service could also carry cable television,

continued on page 2

Cable TV: Abundance For What?

J. Michael Virden,
Essex Community College

All of the grandiose claims for the potential of cable telecommunications are true. "Blue sky" be damned! That thick wire can permit us to perform miracles of information exchange unheard of by previous generations. The hundred-channel state-of-the-art systems now planned or under construction do indeed offer all the channel space we need to reach each other in an incredible variety of ways. We *are* wiring for abundance.

Reality, unfortunately, still has a habit of bringing the sky-soarers back to earth. The question that won't go away remains: Wiring for an abundance of what and produced by whom? At this early stage, the answer appears to be more than a little depressing. We could very well wind up with only ten times as much of the same kind of television we've always had, rather than the alternative programming the technology has promised. Local productions cablecast for a local audience are the least likely survivors of the telecommunications revolution.

The reason for this gloomy prediction lies in the nature of producing materials

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Public Broadcasting develops Vietnam series for PTV and higher education .... **page 4**

Programs test the educational applications of teletext/videotext in schools .... **page 5**

New Jersey Institute of Technology makes continuing education available by computer .... **page 9**

The Center is a program of the American Association for Higher Education One Dupont Circle Washington, DC

SCAN

Dear Subscriber:

In this issue of *TELESCAN* we bring you two divergent views of the impact of cable technology on our social institutions. In "Cable TV: Wiring for Abundance," an article reprinted from a special supplement to the November/December 1982 issue of *Channels of Communication*, Les Brown provides an overview of the developments in cable television over the past 20 years and discusses the ups and downs of penetration rates with an eye toward possibilities for cable over the next several decades.

Picking up on the notion of "abundance" Mike Virden, director of instructional technology at Essex Community College in Baltimore, Md., challenges the notion that increased channel space will indeed enhance the quality of programming available to the public. He reviews the obstacles to improved production for and community uses of cable, including high costs, recent Congressional legislation, and the well-financed agendas of business and industry. He concludes with some suggestions about changes needed to create an environment more conducive to the development of local programming for local audiences.

The advent of cable television has already stirred up a great deal of interest in the postsecondary community. These two pieces analyze the technical potential and dearth of substance impeding the growth of cable television as a vehicle to meet the needs of particular populations.

If you are interested in more information about cable television and postsecondary education, there are several resources available to you. First, you can review the cable television section under the Videoscan heading in this issue of *TELESCAN*. For general information about local programming and public access, contact the National Federation of Local Cable Programmers, 906 Pennsylvania Avenue SE, Washington, DC 20003. In addition, if you have specific questions about cable television in the context of postsecondary education, feel free to contact us during the hours of our Inquiry Service (202/223-3092 or 3093, Tuesdays and Wednesdays, 1:30 p.m.-4:30 p.m. EST) and we'll be able to access the vast amount of information on this topic we currently have in our computerized database.

I'd like to draw your attention to two other characteristics of this issue of *TELESCAN*. You will notice how expansive our Compuscan section has become. Our reorganization provides us with the appropriate format to reflect the rapidly expanding uses of computer technology in postsecondary education. By contrast, you will notice our Audioscan section is not quite as copious as we would like. We are working diligently to gather information about uses of these technologies and would appreciate any assistance you can give us.

Keep in mind, we continue to be interested in your reactions to the reorganized format of *TELESCAN*. Your feedback continues to be our best source of information on how to make *TELESCAN* most useful for you.

Marilyn Kressel

Marilyn Kressel
Director
Center for Learning and
Telecommunications

Information in each section of TELESCAN is categorized using the following symbols:

- **Articles**
- **Books**
- **Washington-based activities**
- **Programs and projects**
- **Legal/regulatory issues**

Wiring for Abundance

continued from page 1

and vice versa. Some day a single wire may suffice for all voice and video communications to and from the home.

One speaks of a *basic* cable service, because all the additional services—the channels specializing in movies and video games, the burglar- and fire-alarm systems, and videotext—call for extra fees. Indeed, from the consumer's standpoint, the hitch with cable may be that it tempts new expenditures by bringing the box office into the home. Some industry analysts believe that once people grow accustomed to the idea of paying for video services their monthly bills for cable will exceed those for the telephone.

What is most unusual about cable, perhaps, is that it was not born in a laboratory like most other communications technologies but rather came into existence accidentally. It began as CATV (community antenna television), an ingenious solution to the television reception problem in rural areas where the terrain interfered with broadcast signals. As the story is told, an appliance dealer in the hilly backwoods of Pennsylvania was unable to sell television sets because picture reception was impossible, so he rigged a large antenna on a mountaintop and connected it to homes in the area by a system of wires. This was in the late '40s. Before long, enterprising technicians in numerous communities deprived of television were building tidy little businesses with such CATV installations.

Initially this was good news for the local television stations because it increased their audiences. It soon turned into bad news, though, with the discovery that the wire could bring in signals to fill all 12 channels on the VHF dial; stations from other cities, imported by microwave relay, were added to the CATV service, creating serious competition for the local broadcasters. But this was only the first stage in cable's emergence as the television of abundance.

The '60s saw the development of a converter that increased the capacity of CATV systems to 20 channels, and cable began to be taken seriously as a new medium. No longer a mere retransmission system for existing television signals, it was capable of carrying its own original programming. A decade later, refinements in the converter increased the capacity to 36 channels, and the technology has advanced now to provide 52 channels on a single cable line. By using two lines, cable systems can provide 104 channels.

During the late '60s, with 20-channel systems as the lure, large cable companies began laying plans to wire the cities.

Those plans were halted by the FCC, which effectively froze the development of urban cable with stiff regulations on the importation of distant signals, while it pondered rules for cable in the 100 largest cities. By the time the freeze ended in 1972, hopes for wiring the cities had been chilled by the horrendous experience of both Teleprompter and Sterling Manhattan Cable, which had already begun operation in Manhattan.

The two companies found that urban construction was far more expensive than anyone had expected, and there were additional problems—the phone company was refractory, landlords demanded payoffs, services were stolen, equipment was vandalized, and police doled out parking tickets to service trucks. But worst of all, New Yorkers showed scant interest in cable, and for several years the companies lost millions of dollars annually. The cable industry made a quick retreat from its march on the cities.

The climate for urban cable changed dramatically in 1975, however, when the eastern-based pay-cable service, Home Box Office, leased a transponder on the Satcom I satellite in hopes of broadening its market. As a national service, it was an instant hit and within two years was operating in the black. But more important, as the first program service to use the satellite, it became, overnight, America's new television network. Its success produced a profusion of cable-satellite networks, as other companies flocked to the satellites for national distribution at relatively low cost. And this gave cable just what it needed for an invasion of the cities: something bigger to sell than improved television reception and more television signals.

There was a clear demand in the cities for pay channels that would deliver movies into the home, uncut and without commercials. Cable was on the move again. By 1980, virtually every city was either being wired for cable or in the thick of the franchising process. Most were demanding large-capacity systems with two-way capability. This favored Warner Amex Cable, the company that pioneered two-way interactive cable with its Qube system, which began operations in Columbus, Ohio, in December 1977. Interest in Qube helped Warner Amex win the franchises for Pittsburgh, Dallas, Houston, Cincinnati, and parts of New York's outer boroughs.

Much of the general confusion about cable rises from its uneven penetration across the country. While some cities are still years away from being wired, others already have highly advanced systems. Moreover, the dimension of each community's system depends largely on when it was built. Those dating from the early '70s have 20 channels, those of the late '70s about 36, and those of the '80s at least 50. But more than half the cable systems currently operating predate the '70s and have such limited capacity—12 or fewer channels—that they can carry only two or three of the cable-satellite services. This unevenness around the country, along with the absence of cable in several of the largest cities, has been the great impediment to the growth of successful advertiser-supported cable networks.

According to the 1982 midyear estimates of the A.C. Nielsen Company, some 34 percent of American households (including those in Alaska and Hawaii) subscribe to cable. But while cable has a penetration of 71.2 percent in Laredo, Texas, it enters only 9.8 percent of homes in the Chicago market and 13.2 percent in Detroit.

Nevertheless, cable continues to spread rapidly across America, its growth rate in the '80s exceeding the forecasts of virtually all the experts. When this decade began there were 4,225 cable systems serving 16 million homes. By mid-1982 there were 4,800 cable systems serving 28 million homes.

The real power of cable as a new communications medium will be felt when the biggest cities are wired and the oldest systems are updated. That will allow the satellite-distributed programming to attain something approaching the uniform national coverage that has been the strength of the commercial broadcast networks all these years.

AUDIOSCAN

Articles, books, programs and projects involving the uses of audio technologies.

Radio

Leach, Eugene R. **"Era of Cooperation: Alliance with Nets Puts Education on Air."** *Current*, February 25, 1983, pp. 4-5. A history of cooperative radio education fostered by the National Advisory Council on Radio in Education.

Needle, David. **"Seattle Commercial Radio Station Broadcasts Software."** *InfoWorld*, March 7, 1983, pp. 1, 6. A report on the first transmission of computer data over radio waves.

Teleconferencing

Jenkins, Thomas M. **"How to Plug into Teleconferencing."** *Training/HRD*, January 1983, pp. 30-32. An overview of audio teleconferencing in use by American businesses for sales training, continuing education programs, and management discussions.

Teaching by Telnet: A Guide to Teleconference Teaching, by Marci Kawalek and Robert Searfoss. Georgia Hospital Association [North by Northwest, Office Park, Atlanta, GA 30330; 404/955-0324]. 1982. 10 pp. $5.

A guide for educators using audio teleconferencing for distance teaching. This booklet includes a description of the Telnet system and four basic guidelines to adapting teaching methods for this medium.

Audiodisc

Gelman, Morrie. **"New Discs to Invade U.S."** *Electronic Media*, January 20, 1983, pp. 1, 23. An announcement of the development of a digital, compact audiodisc that will enter the U.S. market later this year.

Audiotape

Miller, K.; K. Norton; R.C. Reeve; and D.M. Stewart. **"Audio-Enhanced Computer-Assisted Learning and Computer-Controlled Audio Instruction."** *Computers and Education*, Vol. 7 (1983), 33-54. A description of an educational software package that uses an audiocassette recorder controlled by computer to allow branching of sections of audio material in response to students' answers to questions.

VIDEOSCAN

Articles, books, programs and projects involving the uses of video technologies.

Broadcast Television

Behrens, Steve. **"Legal Saga Continues in the West."** *Current*, March 11, 1983, pp. 1, 6. An update on the legal dispute involving mandatory captioning of public television programs for deaf viewers.

"Economy of LPTV Luring Operators." *Electronic Media*, February 3, 1983, p. 19. A view of the advantages of low-power TV, including the economy of capital equipment and exemption from rules applying to full power stations.

"Genesis Takes Lead in Low-Power TV." *Electronic Media*, February 3, 1983, pp. 18, 19. A profile of the leading low-power television network.

Markley, Donald L. **"LPTV: A Review of the Rules."** *Broadcast Engineering*, January 1983, pp. 112-19. A review of the major points of an FCC rulemaking to finalize the criteria for low-power television.

Meigs, James. **"What's What in Corporate TV Facilities."** *Videography*, March 1983, pp. 34-38. A profile of several corporate video facilities that represent a wide range of applications, equipment, and types of business.

Mermigas, Diane. **"PBS Studies STV Shift for Funds."** *Electronic Media*, January 7, 1983, pp. 1, 22. A report of several major public television stations studying subscription TV as an option for generating revenues.

Moozakis, Chuck. **"Getting Ready for Multichannel MDS."** *Cable TV Business*, March 1, 1983, pp. 40-44. A view of the concerns of cable operators, analysts, and civic officials about the development of multichannel MDS.

Telecourse Organization and Implementation: A Workbook for Faculty and Staff, by Barbara Gellman-Buzin. South Oklahoma City Junior College [7777 South May Avenue, Oklahoma City, OK 73159]. 1983. 52 pp. $10.

A journal of experiences in planning and implementing telecourses at South Oklahoma City Junior College. This workbook covers planning telecourses—from gaining institutional approval and support—to evaluation after the course. Issues addressed include assessing internal and external environments that support or oppose telecommunications, delivery systems, coordination, costs, support services, faculty responsibilities, orientation sessions, and marketing.

Public Broadcasting Develops Series for PTV, Higher Education

Among the programs to be broadcast nationally by PBS in fall 1983, is a landmark effort. "Vietnam: A Television History" is the first major prime-time general-audience television series planned simultaneously to be a college television course. Other similar programs have been broadcast for the general public and later adapted for instructional use. This WGBH (Boston) production is also the first comprehensive effort to present a full chronology of the Vietnam conflict.

In September and October 1980, the Vietnam Project conducted four weeks of project seminars. A succession of distinguished specialists on Southeast Asia came from Canada, England, France, and even Thailand, to project headquarters at WGBH to share their experiences, impart their knowledge, and collaborate on guiding the program's development. Working closely with the production staff, an education team simultaneously developed materials for a telecourse to accompany broadcast of the series.

Ancillary materials, including an anthology/guide for students, a faculty/administrator's manual, an audiocassette, a discussion leader's guide, and a comprehensive history, have been prepared in tandem with the television production. These materials incorporate documents not previously available for a television course. Thus, "Vietnam" is unique in its ability to serve learners in both formal and informal settings.

Educational institutions, consortia, and other organizations may obtain license from PBS to use "Vietnam" as a telecourse. This license provides institutions with permission to offer the series as a telecourse, use the faculty/administrator's manual, and tape programs off-air and use them with enrolled students only for the term of the license.

Funding for "Vietnam: A Television History" comes from the National Endowment for the Humanities, with additional funds from foreign co-production partners, the Corporation for Public Broadcasting, PBS, ABC News, the Christopher Reynolds Foundation, the George D. Smith Fund, the public television station program cooperative, and the Chubb Group of Insurance Companies. Development of telecourse materials was supported by the Fund for the Improvement of Postsecondary Education.

Preview kits for "Vietnam" and additional information may be obtained from the Adult Learning Service at PBS, 475 L'Enfant Plaza SW, Washington, DC 20024.

Cable Television

Baker, Geri. **"George Gerbner."** *CableVision Plus*, March 7, 1983, pp. 96-102. An interview with the dean of the Annenberg School of Communications (University of Pennsylvania) on the development and impact of cable television.

Brown, Les. **"The Gospel According to Cable's Tooth Fairy."** *Channels*, January/February 1983, pp. 21-22. A commentary on the lack of diversity in cable programming given the deregulation of the industry.

Engsberg, Janice M. **"Unequal Access: Minorities and Women Fare Poorly in Cable."** *Access*, January 1983, pp. 1, 5. A description of a report by the United Church of Christ that examines the employment status of women and minorities in the cable industry.

Meinhard, Herman. **"Informational Interconnects to Provide Regional Identity."** *CableAge*, February 28, 1983, pp. 27-30. A discussion of cable system interconnects that provide regional programming and the unique applications of hardware and software they may provide for the future.

Wheeler, Thomas. **"Cable Television and the Demands of Franchising."** *Digital Bits in Telecommunications*, January/February 1983, pp. 1, 2. A commentary on the issues surrounding the franchising authority of cities and its adverse affect on cable systems.

Videotext/Teletext

"Videotex and Teletext: Legal Issues Undefined," *The Scott Report*, January 1983, pp. 1-7.

Videotext and teletext services, and the various problems related to them, are described in this article. Videotext is defined as a two-way service, where the user can send a request to a database and receive information on an interactive basis. On the other hand, teletext is defined as a one-way means of distributing information from a central computer to subscribers, by means of a vertical blanking interval (VBI) on a television set.

Legal issues are many. They include who controls the VBI and whether the government should adopt a VBI standard (and if so, what kind). Other issues include whether the government should regulate videotext and teletext at all, and who is responsible for the content of the material broadcast via videotext/teletext.

For example, under the Communications Act of 1934, the broadcaster is responsible for the content of the material broadcast. There is a question as to whether videotext/teletext services are considered broadcasting, common carriage, or neither. It is possible that the FCC can place the services outside the regulatory framework altogether.

Another legal issue is that concerning privacy—what kinds of privacy protection for users should be imposed on venders? This is especially important in such areas as customer billing, subscriber identities, mailing lists, etc. Illinois and Wisconsin have already enacted laws to ensure privacy protection; Maryland, California, Missouri, Massachusetts, and New York are considering doing so. Senator Barry Goldwater has sponsored the "Cable Telecommunications Act," which includes a section on subscriber privacy.

Several publications offering further information on the subject include *International Videotex-Teletext News, Video Print, Videotex, Viewdata-Videotex Report*, and *Viewtext.*

Elton, Martin and John Carey. **"Computerizing Information: Consumer Reactions to Teletext."** *Journal of Communication*, Vol. 33 (Winter 1983), 162-73. A discussion of the teletext field trial in Washington, D.C. to answer questions about market potential, production and design issues, and policy concerns.

"1983 Has Begun, and Where is Videotext?" *Monitor*, January 1983, pp. 10-12. A comparison of the systems described by the terms videotext and online retrieval.

Olibet, Francois. **"Videotex: What Makes It Work?"** *Telecommunications*, February 1983, pp. 56-58. An explanation of videotext system design.

Paisley, William. **"Computerizing Information: Lessons of a Videotext Trial."** *Journal of Communication*, Vol. 33 (Winter 1983), 153-61. A review of the findings of the U.S. Department of Agriculture's videotext test in Kentucky.

Riess, Craig. **"OAG Plans May 1 Debut of Videotext Airline Service."** *Electronic Media*, February 10, 1983, p. 14. A report on a videotext edition of airline rates and schedule guides available to travel agents, corporations, and individual subscribers.

Rosenthal, Edmond M. **"Keyfax: First Nationally but Only the Beginning."** *CableAge*, January 31, 1983, pp. 31-36. An examination of the development of the first national teletext service and the expected improvements in technology that will increase its marketing potential.

Rosenthal, Edmond M. **"Time Teletext Sets Out to Create New Medium."** *CableAge*, January 17, 1983, pp. 26-28. A profile of the Time Inc. teletext service.

Shur, Paul. **" 'Boob Tube' Saves Face."** *Electronic Education*, February 1983, pp. 13-14. An examination of the University of Florida College of Journalism's videotext center, where students produce news and information services, and conduct research studies on the medium.

Wise, Deborah. **"French Teletext and Videotext Immigrate to the U.S."** *InfoWorld*, February 7, 1983, p. 10. A report on the support of two U.S. television networks for a line of products designed and manufactured by a French consortium of high-tech companies.

Witt, Gary. **"The Right Stuff."** *CableVision Plus*, March 7, 1983, pp. 105-108. A view of the competition between cable and telephone for transmission of home banking services.

Witt, Gary, **"The Handwriting on the Screen."** *CableVision Plus*, January 31, 1983, pp. 19-22. A look at the telecommunications division of the American Newspaper Publishers Association which is responsible for reviewing and reporting on current developments in electronic publishing.

Teletext as an Educational Medium: The Los Angeles School Trial, by R. Goldman, E. Gordan, E. Craig, and R. Gingras. Community Television of Southern California. Available from KCET/Los Angeles [4401 Sunset Boulevard, Los Angeles, CA 90027]. 1982. 51 pp.

A report on a teletext field trial to evaluate its value as an education medium in eight schools in the Los Angeles County School system. The book describes the pilot project and its findings in terms of content, quality of service, modes in use, and technical aspects.

TVOntario Launches Telidon in Schools

In what will be the widest range of Telidon education applications in Canada, TVOntario has purchased software and support services from Infomart to provide videotext and teletext to Ontario schools. Initially there will be 100 Telidon terminals, with 75 located in secondary schools and the balance in libraries and youth employment centers.

"TVOntario believes Telidon is a valuable educational medium for several reasons," said Peter G. Bowers, TVOntario's managing director for educational telecommunications. "Telidon's interactive ability in the videotext mode allows individual learners to proceed at their own pace; the delivery of sequenced pages of information that unfold at a rate controlled by the student helps to focus attention and matches the rate of the individual's learning. The interactive capability also allows for periodic feedback to the learner in the form of tests, quizzes, and other communication with an authoritative source, making computer-assisted learning over long distance a reality.

"In addition, Telidon's ability to produce finely detailed color graphics enables the reproduction of a wide range of educational illustrations such as charts, graphs, and maps. It provides a more interesting learning tool because it helps hold the attention of students."

TVOntario established the Ontario Telidon Network with financial assistance from the Ontario Board of Industrial Leadership and Development to provide two basic types of service:

- The Edutel service presents a broadcast teletext magazine offering information, updated frequently, on a variety of interests, such as news, educational features, weather maps, financial reports, reviews of the arts, health care information, TVO program schedules, workshops and seminars, specialized curriculum material, and information on community festivals and other local events.
- An on-line videotext database that includes up-to-date information, in both English and French, on careers and train-

ing opportunities for youth and adults. Telidon pages are compiled from information originating with the Ontario Ministry of Education's Student Guidance Information System.

The system is unique because it takes material from either a teletext or videotext source. The software from Infomart and Telidon terminals from Norpak Ltd. provide a special capability to combine the broadcast method of distribution (teletext) and the wired network (videotext) that exists in no other education settings. The Telidon terminals are multi-mode in that they can switch from videotext to the teletext mode and can be downloaded from either source.

"As more users become familiar with Telidon technology, its simplicity, and its low cost, its applications will increase to become an important part of the computer communications support system nationwide," said Bowers. "TVO's own field trials conducted between 1979 and 1982 have established the potential of Telidon in teaching and training environments."

David Carlisle, president of Infomart, added that education will be one of the largest users of Telidon. "The advanced communications capabilities of Telidon make it ideal for computer-aided learning; for effectively conveying information to students, teachers, and administrators; and for retrieving information."

Further information can be obtained by contacting John Syrett, director, Telidon for TVOntario, P.O. Box 200, Station Q, Toronto, Ontario, Canada M4T 2T1.

Videodisc

Kozen, Nancy. **"Videodisc Bibliography."** *Educational Technology*, February 1983, pp. 52-53. A reference to print materials on videodisc research and development, hardware and software, consumer interests, and product applications.

Videotape

"Medical Videotapes for Clinical Instruction," by David M. Kaufman, *E-ITV*, February 1983, pp. 62-64.

Today's medical students, faced with larger classes and sometimes relatively isolated facilities, do not always experience the advantages of "bedside teaching" common in years past. "Live" patient demonstrations are often inadequate, as are simulated patients. Videotape can help fill the gap.

The illustrative clinical instructional videotape can show actual patients, provide illustrations of their medical problems, reveal abnormal physical findings, and depict the results of subsequent therapy. Patients' conditions before and after treatment (surgery, medication, or psychotherapy) can be shown. Tapes can also be used to test medical students.

There are some production problems, however. Aside from budget constraints, other difficulties arise from the need for color film and proper lighting, the availability of patients, equipment facilities and accessibility, technical expertise, and the need for informed consent.

Questions to be answered before organizing a videotape include: In which lecture(s) is the tape to be used? Will it stand alone or in a series? What other aids will be incorporated into it? Who will review it?

"Fate of Home Taping at Supreme Court." *Broadcasting*, January 24, 1983, pp. 37-38. A review of arguments in the home taping case that will be decided by the Supreme Court this summer.

O'Rourke, Major James S. **"Principles for Good Educational Tapes."** *E-ITV*, February 1983, pp. 65-69. A guide to producing tapes that will more effectively achieve educational goals.

Engineering Consortium Plans National Technological University

The feasibility study for a National Technological University continues with a $50,000 grant from the Hewlett Packard Foundation. The concept was proposed by the Association for Media-Based Continuing Education for Engineers (AMCEE) to offer an accredited master's degree with accumulated credits from a collection of member universities. The new university would use satellite delivery and videotape to bring classes, seminars, and special events to remote and on-campus engineering students.

A task force of representatives of six AMCEE member universities met last December to develop a curriculum in computer engineering. They agreed on a 30 semester-credit-hour program without a thesis of proficiency examination requirement. The curriculum committee also selected a core of subjects in software systems, computer architecture and design, and algorithms and data structures. Additional credit units would be required in mathematics and computational methods, digital design, graphics, and intelligent systems.

Several awards have been received by the consortium, with the Hewlett Packard the largest to date. Requests for proposals from a number of satellite delivery organizations are being solicited and the first classes may be offered as early as spring 1984.

Those wishing further information about National Technological University should contact Lionel Baldwin, dean of engineering, Colorado State University, Fort Collins, CO 80523.

Satellites

"Advent of Direct Broadcast Satellites Bridging Wide Range of New Services," by R. Dennis Fraser, *Communication News*, March 1983, pp. 68-71.

Direct broadcast satellites (DBS) are envisioned as providing a rebirth for the television industry, whose audience is now increasingly fractionalized and disenchanted. Satellite transmission makes possible the delivery of multiple channels of television simultaneously to millions of homes, and will dramatically improve the resolution of the received image. The high power of DBS allows the use of earth station antennas only two feet in diameter.

It is well accepted that the success of a DBS system will be predicated upon the quality of the programming, and it is expected that a "software war" will result as the various services competing for the television audiences all position themselves for the most attractive programs. Pay channels will probably outnumber free, and may provide stiff competition for cable television.

Equipment, cost, and regulatory issues are discussed briefly, and "early entrant projects"—to be offered in mid-1983 in the U.S. Northeast—are mentioned.

"About the Canadian DBS Problem." *Broadcasting*, January 17, 1983, p. 41. A discussion of the problem presented by Canadian requirements of six orbital slots.

"Expanding Satellite Systems Bring New Offerings for Enhanced Services."

Communication News, March 1983, pp. 58-59. A forecast of the expansion of satellite systems and the new service opportunities they will offer in the coming decade.

Gupta, Udayan. **"Developing Nations See Threat in Direct Broadcast Satellites."** *Electronic Media*, February 3, 1983, p. 14. A report on the fears of developing countries that DBS will perpetuate the domination of communications technology by Western nations.

Inglis, Andrew. **"Satellites Bringing in Next Revolution in Broadcast and DBS Distribution."** *Communications News*, March 1983, pp. 60-63. An examination of the role of satellites in program distribution for commercial networks, cable systems, and the potential of DBS.

"Prudential Places a Bet on DBS." *Broadcasting*, February 7, 1983, pp. 31-32. An announcement that Prudential Life Insurance Co. is investing $45 million for a direct broadcast satellite service.

Seliga, Charles S. **"The First Satellite Communications Office Park."** *Satellite Communications*, February 1983, pp. 30-32. A report on a satellite communications and industrial park in New York.

"Whither the Future of DBS?" *Broadcasting*, March 14, 1983, pp. 168-69. A review of comments at a panel discussion on the future of DBS.

Teleconferencing

"Teleconferencing: A Practical Guide to Budgeting," by Bonnie Siverd, *Video User*, February 1983, pp. 16, 30.

Costs involved in organizing and producing a teleconference are discussed in this article, which is an excerpt from *The Teleconferencing Handbook: A Guide to Cost-Effective Communication*, recently published by Knowledge Industry Publications, Inc., of White Plains, NY.

The type of teleconference planned (audio, one-way video, or two-way video) greatly influences the cost, as do the quality of the production and the location. One estimate, however, is that a typical two- to three-hour conference can be held for $100 or less per person.

The following categories of expenses should be considered in budgeting for a teleconference: pre-production costs; production fees, including studio time; transmission fees, including speakerphone, satellite time, and connections; and receiving site costs.

Careful planning is the key to controlling costs, especially for videoconferences, since even the smallest change can be expensive. Another way to keep costs down is to solicit bids from several vendors and explore the possibility of discounts.

Downs, Joan. **"Your Next Board Meeting Could Win an Emmy."** *The Dial*, February 1983, p. 45. An explanation of teleconferencing, its applications, and the vantage position of public broadcasting to assume leadership in the industry.

Gelman, Morrie. **"Hilton, Wold Join for Closed-Circuit Event."** *Electronic Media*, February 24, 1983, p. 16. An announcement of a cooperative venture to produce a series of commercially sponsored video teleconferences on little league baseball.

"The Facility at Aetna Life." *E-ITV*, February 1983, pp. 18-20. A description of a teleconferencing facility in use at Aetna Life Insurance Company in Hartford, Conn.

South Carolina Project Studies Teleconferencing For Public Television

In the first of a three-part proposal funded by the National Telecommunications and Information Administration, South Carolina ETV will conduct a market analysis of the revenue potential of teleconferencing for public television. Identifying and surveying groups most likely to use teleconferencing will follow the initial phase of market research. The final step will identify what share of the potential teleconference market SCETV can expect to serve.

The network has been producing in-state teleconferencing for the past 13 years. Training experiences range from biennial instruction for 9,000 poll workers to a weekly exchange of patient cases by doctors in 30 hospitals around the state. During the past two years, South Carolina ETV's Teleconferencing Design Group has expanded its services to include participation as both a downlink and uplink site for national teleconferences.

Completed research results, compiled by the ERLA Group (a national telecommunications research and consulting company) are to be shared with other public television operations in a printed or teleconference format.

For further details, contact South Carolina Education Television, Drawer L, 2712 Millwood Avenue, Columbia, SC 29250.

Inquiry Service Hours
Tuesday and Wednesdays
1:30-4:30 EST
Call 202/223-3092 or 3093

COMPUSCAN

Articles, books, programs and projects involving the uses of computer technologies.

Computers

"Computers and Teacher Training," by Robert A. Zuckerman, *AEDS Journal*, Vol. 16 (Winter 1983), 123-30.

Objectives and applications should be the first things that colleges consider as they acquire computers. Only after these have been identified should machines themselves be investigated.

Computers are applied to instruction in CAI (Computer-Assisted Instruction), CAL (Computer-Assisted Learning), CATTS (Computer-Assisted Teacher Training Systems), CMI (Computer-Managed Instruction), and CDMS (Classroom Data Management Systems). In most cases, teachers need only to understand the uses to which a computer is put, and need not be programming experts.

Levels of computer use by educators include the following: (1) teaching machine user, (2) basic user of "canned" instructional programs, (3) activity writer, (4) information manager, (5) developer of simple courseware, (6) developer of advanced courseware, (7) developer of complex courseware, and (8) software programmer.

A university computer resource center to train teachers should include the following instructional goals: awareness and recognition of the instructional use of computers in public school settings, of computer terminology, and of the components of a computer center; knowledge and skill in getting the computer system ready for use, in using the operating system, in planning for canned instructional program use, and in developing custom drill and practice programs; and limited knowledge and skill in programming in BASIC.

An institution should first examine the current status of computer use and its own faculty expertise before establishing a computer resource center.

"Results of a Project for Developing an Academic Computing Program," by Sheldon P. Gordon, *AEDS Journal*, Vol. 16 (Winter 1983), 113-21.

A large-scale faculty development project, funded under a grant from the National Science Foundation's CAUSE (Comprehensive Assistance to Undergraduate Science Education) program, to implement the academic use of the computer is described in this article. The three-year project at Suffolk Community College affected the academic areas of mathematics, physics, chemistry, earth and space sciences, engineering, and economics. Focus was on faculty training and development in computer usage.

The grant allowed the college to purchase a new minicomputer system (PDP 11/34) supporting 20 terminals and servicing the college's three campuses. It also provided selected faculty members with 20 percent released time to prepare packages of computer-oriented materials for particular courses, offered summer workshops to teach instructors BASIC programming, and familiarize them with appropriate materials, such as the packages prepared under the grant.

An open-ended philosophy was adopted regarding computer usage in order to encourage the most extensive use. The computer has been incorporated into cour[illegible]n a variety of different ways, many unforeseen. It has been used for simulation and problem-solving in science and math courses, and has been used in the computer-assisted instruction mode to provide additional drill in other classes.

Blair, Marjorie and Sharon Lobello. **" 'Will You Hold, Please, for Another Transfer' Is Not A Good Sign."** *Electronic Education*, February 1983, pp. 10-12, 44. A survey of colleges on their commitment to computer literacy for students.

Chin, Kathy. **"Computers Now on Loan in the Local Public Library."** *InfoWorld*, February 28, 1983, pp. 26-28. A report on libraries across the country that have installed computers for public use.

Chin, Kathy. **"80% of Stanford Faculty Will Have Micros by 1987."** *InfoWorld*, February 28, 1983, p. 25. A discussion of a survey that predicts the use of computer-based technologies in every department of Stanford University.

Chin, Kathy. **"Micros Help Burn Victims Recover Quickly."** *InfoWorld*, January 31, 1983, pp. 21-22. A description of a computer program that enables dieticians to perform nutritional analyses for burn victims.

Christ, Frank. **"Techtalk: Choosing a Computer for Instruction."** *Journal of Developmental & Remedial Education*, Vol. 6 (Winter 1983), 10, 30. A guide to criteria for selecting a computer for instructional use.

"Computers in Alumni Development." *CASE Currents*, March 1983, pp. 6-60. An entire issue devoted to the use of computers in academia, covering guidelines to hardware and software as well as applications for fund-raising.

"Computers Threaten TV Use." *Electronic Media*, February 17, 1983, p. 16. A report on a study that suggests that home computers are reducing television viewing time.

Cushing, David. **"Computer Literacy for Managers: The New Challenge in HRD."** *Training/HRD*, February 1983, pp. 22-26, 31-32. An explanation of computer literacy and the need for computer literacy training for business managers.

D'Orazio, Richard J. **"Computers in Adult Education."** *T.H.E. Journal*, March 1983, pp. 109-11. A profile of the development of an introductory course for adults on computers.

"Facing the Challenge of Computing: Stevens, Clarkson, Drexel, CMU." *Educom Bulletin*, Winter 1982, pp. 14-16. A look at four institutions taking a leadership position in using computer technology for academic curricula.

Golas, Katherine C. **"The Formative Evaluation of Computer-Assisted Instruction."** *Educational Technology*, January 1983, pp. 26-28. An examination of the need for formative evaluation of materials for computer-assisted instruction.

Hagerman, William L. **"Continuity Writing Taught by Computer."** *E-ITV*, February 1983, pp. 48-53. A profile of a program at the University of Southwestern Louisiana to teach broadcast writing by using a computer.

Haight, Timothy R. and Robert M. Rubinyi. **"How Community Groups Use Computers."** *Journal of Communication*, Vol. 33 (Winter 1983), 109-17. A study of the adoption of new information technology by community organizations.

Heines, Jesse H., Randolph H. Levine, and Joann Robinson. **"Tomorrow's Classroom—The Changing Focus in Computer Education"** *T.H.E. Journal*, March 1983, pp. 100-108. An examination of the development of an educational services department at Digital Equipment to study the role of computers for learning.

Jay, Timothy B. **"The Cognitive Approach to Computer Courseware Design and Evaluation."** *Educational Technology*, January 1983, pp. 22-26. A discussion of how to translate cognitive research into computer courseware guidelines.

Kearsley, G., B. Hunter, and R.J. Seidel. **"Two Decades of Computer-Based Instruction Projects: What Have We Learned?"** *T.H.E. Journal*, February 1983, pp. 88-96. A review of large-scale CBI implementations and their corresponding evaluations.

Lathrop, Ann and Curtis May. **"The Amazing Library Computer."** *Electronic Learning*, February 1983, pp. 68-70, 108. A look at how libraries are using microcomputers as educational media and as a library management tool.

Lee, Mildred K. and Granville W. Lee, Jr. **"Wanted: A Business/School Consortium to Promote Computer Education."** *Educational Technology*, March 1983, pp. 10-14. A commentary on the effects of computer technology on education and the need for business and educational groups to work together to resolve issues concerning the use of computers.

Levin, Robert and Claire Doyle. **"The Microcomputer in the Writing/Reading/Study Lab."** *T.H.E. Journal*, February 1983, pp. 77-79, 100. A look at the North Country Community College's Learning Lab which uses computer-assisted instruction to support writing, reading, and study skills instruction.

Levy, Steven. **"Travels in the Network Nation."** *Technology Illustrated*, February 1983, pp. 56-61. A view of the variety of information services available to personal computer users connected by telephone.

Marshall, Stewart. **"Computer-Aided Instruction in the Skills of Linguistic Analysis."** *Computers and Education*, Vol. 7 (1983), 25-31. A description of a computer-aided instruction program for linguistics students in Sheffield, England.

Marvin, Carolyn and Mark Winter. **"Computer-Ease: A Twentieth-Century Literacy Emergent."** *Journal of Communication*, Vol. 33 (Winter 1983), 92-108. A comparison of computer literacy and written literacy and the need for public commitment of resources to train citizens in this area.

"Micros and the Disadvantaged: Why We're Missing a Great Opportunity." *Electronic Learning*, March 1983, pp. 20-22. A commentary on trends in microcomputer distribution and use and the implications for social equity.

Needle, David. **"A Stringent Licensing Inhibits Micro Education."** *InfoWorld*, February 14, 1983, pp. 1, 8-9. A report on the licensing requirements for teaching computer education in Massachusetts and the difficulties they have caused for individuals teaching personal-computer proficiency.

Packer, Arnold. **"The Good Computers Could Do."** *Videodisc News*, January 1983, pp. 10-11. A view of the need for the application of computer technology to the training and education of the unskilled, uneducated, and unemployed.

Rice, Ronald E. and Donald Case. **"Electronic Message Systems in the University: A Description of Use and Utility."** *Journal of Communication*, Vol. 33 (Winter 1983), 131-52. A study of computer-based communication systems in organizational settings that focuses on a pilot program at a major university.

Sircar, Sumit. **"Microcomputer Support for the Business Data Processing Course."** *Journal of Educational Technology Systems*, Vol. 11 (1982-83), 259-64. A description of a facility at the University of Texas at Arlington to provide computing support to students at the introductory level, including considerations of cost, maintenance, and staffing.

Steffin, Sherwin A. **"A Suggested Model for Establishing the Validity of Computer-Assisted Instructional Materials."** *Educational Technology*, January 1983, pp. 20-22. A discussion of the difficulties involved in and solutions for the development and evaluation of computer-assisted instructional materials.

Steinberg, Esther R. **"Reviewing the Instructional Effectiveness of Computer Courseware."** *Educational Technology*, January 1983, pp. 17-19. A guide to evaluating the effectiveness of computer courseware.

Williams, Warren S. and Jules Shrage. **"Microcomputers and Education: An Overview of Popular Hardware and Software."** *Educational Technology*, February 1983, pp. 7-12. An overview of popular microcomputer hardware and software available for the various systems.

Computers and Information Systems in the Two-Year College, by Lora P. Conrad and Louis W. Bender. Institute for Studies in Higher Education [Department of Educational Leadership, College of Education, Florida State University, Tallahassee, FL 32306]. 1983. 80 pp. $5.

A study of the applications of the computer in two-year colleges which included a literature search, a national survey of colleges, and a series of institutional case studies. This monograph looks at the role of the computers and their implications for hardware, software, policy, and personnel issues.

Microprocessors for Managers: A Decision-Maker's Guide, by Ronald L. Krutz. CBI Publishing Company, Inc. [285 Congress Street, Boston, MA 02210]. 1983. 150 pp. $24.95.

A primer for decision-making about the costs, selection, implementation, maintenance, software support, and potential pitfalls of microprocessors and microcomputers. This book provides a historical overview of computing, as well as the present and future roles for the technology, in addition to explaining terminology and functional characteristics.

Continuing Education Courses Offered Via Home, Office Computers

For the first time, a university is using the computer to give formal continuing education courses that can be taken at home or in the office. New Jersey Institute of Technology's Division of Continuing Education is offering 16 seminars this spring, to be taken via computer terminal or microprocessor.

This innovation in teaching is taught by instructors and experts from all over the country, and may be taken on one's own schedule in a way that provides more individual participation than is usually possible in traditional time-bound courses. The student's terminal or microprocessor becomes part of a nationwide computerized conferencing system, the Electronic Information Exchange System (EIES), which allows unlimited communication with the instructor and with other participants at any time of the day convenient to the user.

In February, NJIT presented a two-hour live, interactive demonstration geared primarily to training and development officers of the corporate and business community. Some of the courses being offered were given over EIES free-of-charge recently as a pilot program. Evaluations at the conclusion of the courses confirmed earlier findings of increased student participation and indicated increased enjoyment of the courses taken online over those taken in a traditional classroom. The courses were offered to faculty and administrators at a consortium of 10 liberal arts colleges, as well as those at NJIT and other EIES users.

No prior experience with computers is required for the courses. On-line training in the use of EIES is provided prior to each seminar session, and on-line user consultants are available at no extra cost to help teach the system.

The seminars are given over a three-month period, and each delivers at least as much material as would be given in four full days of face-to-face lecture. Among the courses being taught by NJIT faculty members are "Human Communications Via Computer," taught by Murray Turoff, director of the Computerized Conferencing and Communications Center, and Roxanne Hiltz, chairman of the Department of Sociology, Anthropology, and Social Work at Upsala College; "Computer Literacy: A General Approach," taught by Julian Scher, associate director of the Center, and Darnee Phipps, computer science instructor in the Center for Pre-College Programs; "Alternative Leadership Styles," taught by Miriam Mills, assistant professor of industrial relations; "PASCAL Programming: An Introduction," taught by Anita LaSalle, associate chairman of the Department of Computer and Information Science; and "Selecting and Evaluating Microcomputers," taught by James Whitescarver, systems analyst and adjunct faculty member at the Center.

Three continuing education units will be awarded for each completed seminar. For more information contact the NJIT Department of Continuing Education at 201/645-5235.

Interactive Video

Allen, David. **"Repurposing Videodiscs."** *Videography*, February 1983, pp. 71-73. A discussion of the variety of discs that may be used for purposes other than those intended by the producer.

Boen, Linda L. **"Educational Technology Research: Teaching With an Interactive Videocomputer System."** *Educational Technology*, March 1983, pp. 42-44. A study of student response to interactive video as compared to traditional lectures.

DeBloois, Michael L. **"Foreign Language Instructional Technology Conference (FLINT)."** *Videodisc News*, January 1983, p. 14. A review of presentations at a conference on the use of interactive video for foreign language instruction.

Lent, Richard M. **"The University of Maryland's CIDE Project."** *Videodisc News*, January 1983, pp. 8-9. A profile of a project to test the feasibility of delivering college courses off-campus via computer and videodisc technologies to meet the needs of business, industry, and government.

"Videodiscs and Computers: A Dynamic Duo." *Business Week*, February 7, 1983, pp. 109-11. A report on several consumer and commercial applications of interactive video.

"VIM Network." *Videodisc News*, February 1983, pp. 9-14. A look at the Videodisc/Microcomputer Network comprising schools, school districts, and educational organizations using microcomputers as videodisc controllers to teach basic skills and other curricula.

Have you ordered your copy of *Meeting Learners' Needs Through Telecommunications: A Directory and Guide to Programs*, by Raymond J. Lewis? If not, you'll want to be sure to have this handy reference tool in your personal library. This one-of-a-kind publication surveys 70 institutional programs on their use of telecommunications technologies to serve off-campus learners and discusses current and future trends which will have an impact on the delivery of postsecondary education. Price is $45 prepaid from the Center for Learning and Telecommunications, One Dupont Circle, Suite 600, Washington, DC 20036. Add $2.50 for postage outside the U.S.

MACROSCAN

Articles, books, resource documents, programs and projects involving the uses of combined technologies.

Behrens, Steve. **"It's Happening . . . Off-Campus."** *Current*, February 25, 1983, pp. 1-8. A review of a new publication that surveys colleges on their use of telecommunications technologies to provide off-campus instruction.

"Catching Copyright Up With Technology." *Broadcasting*, March 14, 1983, p. 46. A report on a proposal by the Senate Subcommittee on Copyrights, Patents, and Trademarks to upgrade copyright laws to keep pace with new technological developments.

Hopping, Lorraine. **"Do-It-Yourself In-Service Training Packages."** *Electronic Learning*, February 1983, pp. 38-45. A guide to several multimedia resource packages to support computer in-service training programs.

Green, Doug and Denise Green. **"Handicapped Typewriter for the Physically Disabled."** *InfoWorld*, January 7, 1983, pp. 39-41. A description and evaluation of a typewriter designed to help disabled people who cannot operate a standard typewriter keyboard.

Ross, Steven. **"Are We Creating an Information Elite?"** *Technology and Society*, Winter 1982-83, p. 3. A commentary on the need to subsidize access to new information technologies for the masses who may be excluded from using them.

Steffen, Robert F. **"The Evolution Process in Information Technologies."** *Educational Technology*, March 1983, p. 45. A view of the development of minor technologies devised to extend applications of major technologies that are now having great impact on society.

Tucker, Marc. **"The Turning Point: Telecommunications and Higher Education."** *Journal of Communication*, Vol. 33 (Winter 1983), 118-30. An overview of the role of instructional technology in higher education and market forces that provide incentives for the increasing use of telecommunications in the future.

Learning at a Distance and the New Technology, Educational Research Institute of British Columbia [Suite 400, 515 West 10th Avenue, Vancouver, B.C. V5Z 4A8, Canada]. 1982. 102 pp. $10.

A report on issues related to satellites, videodiscs, videotext, and microcomputers. This book focuses on distance learning, describing institutions in the U.S., Canada, and Britain, and the technologies currently in use.

1982 CPB Public Broadcasting Directory, Corporation for Public Broadcasting. Available from the Office of Corporate Communications [1111 16th Street NW, Washington, DC 20036]. 1982. $5.

A directory of national organizations, regional networks, state agencies, and public radio and television stations. This book lists stations geographically, by personnel, call letters, and licensee type, and provides information on organizations related to public broadcasting.

Society's Stake in the Communications Future—What Can Grant-Makers Do? by James Traub. Aspen Institute [717 Fifth Avenue, New York, NY 10020]. 1982. 14 pp. Free.

A report on a seminar on the role of foundations in monitoring new developments in the communications field. It covers participants' comments during lecture-demonstrations on implications of the new technologies for society and public policy, applications in the nonprofit sector, and the contributions to be made by further research in this area.

British Open University Moves New Center to National University Consortium

The North American Center for Great Britain's Open University has moved from New York to the office of the National University Consortium in Maryland.

The British Open University Foundation's office in New York opened in 1974 with the goal of seeking cooperative activities with U.S. institutions of higher education. While goals for co-producing courses with American institutions have not been realized, BOUF vice president Michael Neil said, "Our experience has shown that the most likely modes of cooperation have been the adaptation of Open University courses and the exchange of information and personnel. NUC has been the most successful in this regard and its member colleges are the biggest users of our materials. Housing our North American Center near the NUC seems to be a logical step."

Services at the newly located center will include maintenance of the BOUF library, with its resource materials and complete catalog of British Open University courses.

The British Open University, often described as one of the most important innovations in higher education, is an autonomous, degree-awarding institution established in 1969. Since then, more than 250,000 students have enrolled in BOU courses and received college instruction through a combination of correspondence, texts, television and radio broadcasts, records and audiocassettes, film strips, home experiment kits, and tutors.

The British Open University came to the U.S. in 1972 under the auspices of the College Board and the Educational Testing Service, in a program financed by the Carnegie Corporation. BOU courses were tested at three American colleges—University of Maryland University College, University of Houston, and Rutgers University. Of these, the University of Maryland program has been the most successful. In 1980 University of Maryland University College and the Maryland Center for Public Public Broadcasting, with assistance from the Carnegie Corporation, founded the National University Consortium. Now an independent association of colleges and universities linked with public broadcasting stations and cable systems, the National University Consortium provides its members with bachelor's degree programs uniquely suited to the needs of adult part-time students.

The address of the new office is: BOUF Center, Room 248, Center of Adult Education, University Boulevard at Adelphi Road, College Park, MD 20742.

Cable TV: Abundance for What?

continued from page 1

for this particular medium. Television production of any kind is far more time-consuming, complicated, and expensive than the inexperienced can imagine. Consequently, those large businesses with extensive experience in some form of media production stand a good chance of using cable technology effectively. Agencies for which media production is a new venture will, in all likelihood, be overwhelmed by the costs and complexity of the task. The potential of cable for providing significant improvement in public access, communications networks for municipalities, and additional educational media may remain nothing more than that—potential. The entertainment establishment will provide us with more movies, more extensive sports coverage, and maybe even a little more cultural programming. The information establishment—education, libraries, museums, even local governments—will wistfully see the potential, but fall short of real utilization.

If all the difficulties associated with local production weren't discouraging enough, Congress seems to show remarkably little inclination to promote community uses of cable. The Senate Commerce Committee has recently passed a bill, sponsored by Senator Barry Goldwater, that would substantially deregulate the cable television industry. Deregulation, unfortunately, will result in diminishing the ability of local governments to determine the conditions for operating local cable businesses. As the role of the FCC in establishing a national policy for regulation grows, local production capabilities and access will become increasingly difficult to maintain.

The cable companies are not the greedy foxes they are all too often pictured to be by the local municipalities. By and large, they are run by very successful businessmen who know how to make a profit while keeping most customers happy. But the fact is that the local channels are by far the least profitable of the programs offered, and no businessman is in the cable field to pass up opportunities to increase profits. As more and more paying channels develop, channels dedicated to local school systems, colleges, libraries, etc. will be increasingly difficult to justify carrying if the requirement to do so is removed.

The near future will see large businesses and industries seeking to lease channels from the franchise holders. Figures approaching a million dollars a year for a leased channel in a large metropolitan area have been predicted. In all but the largest channel-capacity systems, channel space is going to be at a premium very soon. When this situation occurs, the cable operators are going to reconsider their community commitments to public service. Channel space once dedicated to nonprofit institutions will look very tempting for reallocation.

Let's look briefly at production costs. There is no point in even discussing the level of staffing and equipment required to produce the technical quality audiences have been watching for the past 20 years. Costs for that kind of production are far, far beyond the reach of any local agency this side of Kuwait. But even productions of a much simpler and less sophisticated nature require very expensive hardware and experienced staff support.

So we're talking about picture quality and production values that the average viewer will just barely tolerate. Decades of viewing network shows has created a taste for technical excellence while presenting pablum for content. Local producers, on the other hand, have to strive for worthwhile subjects and ask for tolerance for their inferior technology. Narrowcasting or not, viewers in justifiable numbers have to be drawn away from what they have always watched. No easy task. Maybe even impossible.

But before we local producers turn *wondervision* over entirely to the giants isn't there anything we could try? What a terribly wasted opportunity we'll look back on if the cable revolution only results in a hundred channels of more major movies, more national sports, and more satellite-relayed big bucks productions from Playboy, Nashville, or Ted Turner.

There are many developments that have to happen if true narrowcasting is to survive on the thousands of cable systems across the country. But two of these must occur if we are to stand a chance of survival. The first of these needs is for local governments to recognize the necessity for at least one, and possibly several, fully equipped and professionally staffed production facilities. This must be in addition to whatever the cable company builds for its own use and to meet its franchise requirements for public access. Then the local government should *mandate* cooperative productions from the various municipal agencies. Second, local producers across the states, regions, and even nationally have got to start sharing usable programming with each other on a systematic basis. This will require the development of regional clearinghouses, staffed to facilitate the rapid exchange of programs among the various users. Until the "wired nation" gets wired, we'll have to use the mail.

The real potential of cable is not only for an abundance of channels filled with programs produced by faceless professionals somewhere far away. It's those channels *and* locally produced channels aimed at specific local audiences. If the local channels aren't used, the nationals will eventually fill the available space. And you and I will be the poorer for our failure to use *magnavision's* full potential.

Periodicals

Abstracts and bibliographies appearing in this issue of *TELESCAN* cover the period between January 15, 1983 and March 15, 1983. Below is a list of periodicals reviewed for this issue that do not appear in our original list of publications (September/October 1981):

Digital Bits in Telecommunications
George Washington University

Journal of Developmental and Remedial Education
Appalachian State University

Errata

Due to our haste in reorganizing the last issue of *TELESCAN* and getting it printed on time, we overlooked some rather obvious errors. They are listed below. We apologize for any inconvenience this may have caused our readers.

Page 4—Albert, Michael S. "Can DBS and Cable Coexist?" should read *November 1982.*

Page 5—Livingston, Victor and Gary Rothbart. "Krisbergh and Galesi," should read *CableVision Plus, December 13, 1982.*

Page 9—Troutner, Joanne. "How to Produce an Interactive Program," should read *Electronic Learning, January 1983.*

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Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

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TELESCAN

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1983

The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUE 12

Satellites Are a National Resource to Educate/Train Corporate America

Excerpts from an article appearing in *Communications News*, March 1983, by Harold Rice, vice president, Video/Audio Services, RCA American Communications

The need for training and education of employees is not argued in corporate America. In Information Bulletin 89, The Conference Board states that 85 percent of the respondents in a survey it conducted maintain on-site training or education programs for employees. For non-exempt employees, these programs are largely for new hires. For salaried employees, the programs are designed to improve performance.

The study also showed that tuition aid to white-collar workers is provided by 90 percent of the respondents, and to blue-collar workers by almost 80 percent. As illustrative of the importance respondents place on job-related training, 75 percent have this criterion.

One portion of this study struck an interesting note for me—and that is that 35 percent of the U.S. companies surveyed provide *remedial* education to employees. This might prove a market for broadly distributed courses in basic language and math that could be tuned in by a nationwide audience of participating companies. This could prove more cost-effective than the company funding the course on its own premises or working with local school districts.

The corporate financial commitments can be considerable for education and training. The American Society for Training and Development says that it is not unusual for major companies to spend $1,000 to $2,000 per employee for education. This totals nationwide some $30 billion a year—almost as much as the annual expenditure on the nation's publicly financed colleges and universities. And the American Council on Education reports that there are more than 2,000 courses at 138 corporations that are worthy of regular academic credit. Companies such as AT&T, General Electric, General Motors, and Xerox each offer several dozen of these courses. . . .

I believe, therefore, that we can accept as a given fact that there is a need for, and a market for, education and training in corporate America.

Let's turn now to the application of video technology to these courses. I am a little old-fashioned, because I like, and feel best about, the personalized atten-

continued on page 11

Higher Ed Serves Corporate Need for Satellite-Delivered Training Programs

Elizabeth Young, president, Public Service Satellite Consortium

In "Satellites Are a National Resource to Educate/Train Corporate America," Mr. Rice reports on the status of corporations as they explore telecommunications to meet their training needs. There are, fortunately, more examples than he mentions of traditional "continuing education" being delivered by both business and associations that use satellites. Among those the Public Service Satellite Consortium and its subsidiary, SatServ, have worked with in recent months are the American Hospital Association, the American Hospital Television Network, the American Urological Association, the U.S. Department of Agriculture, and Petro Lewis Securities. Additionally, the American Law Institute-American Bar Association, mentioned in his article, has now conducted 18 videoteleconferences to date, all coordinated by the PSSC. While these organizations do use video cassettes (and even audio cassettes) for delivery, they also have found communications satellites extremely useful for time-sensitive, interactive seminars.

continued on page 2

In this issue . . .

Information on satellite resources—DBS, earth stations, and videoconferencing . . . . **page 1**

Videodisc study allows participants to produce sample disc . . . . **page 7**

ITV staffs attend summer computer camp . . . . **page 9**

Project underway to facilitate statewide planning for educational telecommunications . . . . **page 10**

SCAN

Dear Subscriber:

This issue of *TELESCAN* brings you some insights into the potential of video teleconferencing for education and training. In an article excerpted from the March 1983 issue of *Communications News*, Harold Rice, vice president, Video/Audio Services, RCA American Communications, discusses the ways in which video teleconferencing can begin to have a greater bite of the large corporate financial commitment (in excess of $30 billion annually) to education and training. He lists several examples of teleconferencing by firms such as Allied Van Lines, TRW, and Ford Motor Company. Rice maintains that teleconferencing will need to be proved economically justifiable to make large strides in the corporate training world.

Elizabeth Young, president, Public Service Satellite Consortium, underscores Rice's point about the potential of video teleconferencing for business and industry. She brings into the scenario the possibilities for colleges and universities to serve as receiving and conferencing sites for satellite events. In projecting the nature of satellite-delivered events at campuses, Young predicts that from 30 to 40 percent will fall under the broad heading of professional continuing education. She reiterates Mr. Rice's point that business and industry will not immediately embrace this technology for educational purposes but will use it more frequently for new product introductions, sales presentations, and a variety of one-way information distribution.

If you are interested in additional information about the coordination of video teleconferences, here are some organizations you might contact:

—ACSN-The Learning Channel, 1200 New Hampshire Avenue NW, Suite 240, Washington, DC 20036; 202/331-8100.

—National University Teleconference Network, 204 Whitehurst, Stillwater, OK 74078; 405/624-6606.

—PBS/Confersat, 475 L'Enfant Plaza SW, Washington, DC 20024; 202/488-5181.

—PSSC/SatServ, 1660 L Street NW, Suite 906, Washington, DC 20036; 202/331-1960.

For your information, Center staff attended the Washington, D.C. site of a national videoconference funded by the W.K. Kellogg Foundation. The videoconference showcased a three-year Kellogg-funded effort by Ohlone College, near San Francisco, to confront the problems of nursing students as they make the transition from education to work. Three years of development and testing of this preceptorship program were compressed into the five hours of the videoconference. If you are interested in additional information about this event call Ohlone College at 415/657-2100.

While we are on the topic of teleconferencing, let me shift gears for a moment to audio teleconferencing. For those of you unfamiliar with it, audio teleconferences are interactive meetings conducted via telephone lines connecting individuals or groups at distant sites. Through audio teleconferences, experts working at their own offices can make presentations to groups convened at multiple sites. General discussion can follow the presentations.

We at the Center have been experimenting with presentations conducted via audio teleconferencing. Over the past several years, Center staff have had repeated requests to provide overview information about the state of practice in telecommunications and higher education. To date over 25 on-site presentations have been made. To reduce costs and make these presentations more accessible and to involve practitioners from many places around the country, we are planning to launch this presentation, "An Overview of Uses of Telecommunications in Higher Education," via audio teleconferencing this fall. Keep your eyes open for more details in the next issue of *TELESCAN*.

Hope you're enjoying the summer!

Marilyn Kressel

Marilyn Kressel
Director
Center for Learning and
Telecommunications

Higher Ed Serves Corporate Training Needs

continued from page 1

Whether businesses and associations use satellites to deliver education and various types of meetings and other information, institutions of higher education *can* play a significant role as the receiving and conferencing sites for such satellite events. Some colleges and universities—notably, those affiliated with ACSN-The Learning Channel or with PBS and NPR—already have satellite facilities available. Thus, when an organization is looking for a convenient, professionally equipped and staffed location to serve as a node in a satellite network, these institutions are ready to handle the job.

As Mr. Rice implies, decision time in corporations can be long. We are not yet at a point where all businesses and associations are comfortable using satellites, and we are certainly not yet at a time when most of them will want to invest in their own satellite system hardware. In fact, many of the organizations that are already users prefer leased facilities that are professionally equipped and staffed. Thus, for example, the continuing education division of an educational institution can fulfill the corporate preference for both the satellite receiving earth station and an attendant conference room.

The Broker's Role

Most corporations and associations that use satellite facilities today seek the services of a broker or coordinator. While there are more than 30 such entities, only a few are handling the major portion of the growing video-teleconferencing market and still fewer concentrate on working with clients who want to transmit continuing professional education. Among the brokers/coordinators that provide such satellite services and work with colleges are: ACSN-The Learning Channel, the National University Teleconference Network, PBS's Confersat, and the PSSC/SatServ organizations. SatServ is also establishing the Campus Conference Network®, a system of interconnected satellite facilities located at campuses that affiliate with the network. The expectation is that some institutions will want to work with several of the existing brokers as well as establishing informal linkages with businesses in their own communities.

What will be the nature of the satellite-delivered events down-linked to campuses in the near future? From our experience with coordinating teleconferences and other satellite programs over eight years, we expect that from 30 to 40 percent of all satellite-delivered teleconferences will fall under the (admittedly broad) heading of continuing professional education. The clients sponsoring these seminars are most likely to be professional associations like the American Hospital Association, the Practising Law Institute, the American Law Institute-American Bar Association, and the American Dietetic Association.

As Mr. Rice notes, it is less likely that business will immediately leap to this still-young technology to meet its educational needs, although a few companies will be testing the water. However, business and industry will use satellites increasingly for new product introductions, sales presentations, regional and national meetings, reports to stockholders, and one-way information distribution. These uses will account for more satellite time than traditional educational courses.

Of course, there is no reason that colleges and universities cannot provide receiving facilities for all types of satellite-delivered events. Many colleges doing so today have channeled this service through their communications division or through continuing education departments, but specialty schools, such as law schools and colleges of medicine, may find it equally beneficial to create satellite teleconferencing centers to serve their own needs and those of other parts of the university.

Indeed, today when the PSSC or SatServ coordinates a teleconference, one of our most likely partners will be a college campus, because we have found that those that are satellite equipped often have the best local facilities and personnel—even better than what may be offered by a commercial broadcast station or hotel. Why? Because colleges and universities are in the business of providing an educational service and that is a large part of what the client is looking for in planning a satellite event.

What Organizations Look For

Some of the specifics that sponsoring organizations seek (in addition to the basic ability to receive satellite signals) are: parking for their participants, a conveniently located meeting room that is both comfortable and well equipped, a telephone connection so that the teleconference can be interactive with audio from each site, a site coordinator who acts as host and troubleshooter, and food or at least coffee service. Most institutions of higher education can provide all of these requirements and do so on a regular basis.

A key to becoming involved in satellite communications is to be able to interface with local groups that might use the campus facilities and with the national brokers who bring most of the business to the local site. An equally important consideration is to invest in quality equipment. A similar requirement is to plan for expansion of satellite services. Mr. Rice is right about the market being a modest one today with most of its potential unrealized. But it is growing, and institutions of higher education that want to play a central role in their communities are in an excellent position to do so even though there are and will be other players in this field.

AUDIOSCAN

Articles, books, programs and projects involving the uses of audio technologies.

Radio

Gladstone, Brooke. **"Retrenchment: 'First Phase of Reality'."** *Current*, March 25, 1983, pp. 1, 2. A discussion of the repercussions from budget shortfalls at National Public Radio.

Gladstone, Brooke. **"Rooted in Colleges, Audio Net Planned for Adult Education."** *Current*, April 19, 1983, p. 12. A report on a project to deliver radio courses to adult learners.

Telephone

Forecasting the Telephone: A Retrospective Technology Assessment of the Telephone, by Ithiel de Sola Pool, Ablex Publishing Corp., 355 Chestnut Street, Norwood, NJ 07648; 201/767-8450. 1983. $19.50.

The result of a National Science Foundation study undertaken at MIT, this book provides a history of the development of the telephone in terms of technology assessment.

Teleconferencing

"Planning Teleconferencing Applications in the West Indies." *Uplink*, March 1983, pp. 3, 8. An overview of the audio teleconferencing system at the University of West Indies for tutoring, training, and meetings.

1981 Audio Conferencing Handbook, by Paul D. Rowan. Institute for the Future. [Available from ERIC Document Reproduction Service, P.O. Box 190, Arlington, VA 22210. Refer to document number ED 213 399.] 1981. 36 pp. Microfiche $1.17; Paper copy $5.49.

An outline of ways to conduct audio conferences that reviews equipment needed, cost factors involved, and guidelines for effective use of the technology. This handbook is the result of a project designed to improve services to the developmentally disabled in Vermont.

Information in each section of TELESCAN is categorized using the following symbols:

Articles

Books

Washington-based activities

Programs and projects

Legal/regulatory issues

VIDEOSCAN

Articles, books, programs and projects involving the uses of video technologies.

Broadcast Television

"Showdown on ITFS Nears," by Steve Behrens, *Current,* May 3, 1983, pp. 1, 4-5

An FCC ruling was due the end of May on whether the ITFS microwave channels remain reserved for educational uses or can be staked out by entrepreneurs who want to start up "wireless" cable MDS pay-TV in certain markets.

Entrepreneurs and educators to date have not been able to reach a compromise, although a possible ruling would allow or require educators to lease their unused channels to businesses.

One problem is that areas that are the most attractive to entrepreneurs—big cities—are generally the ones most frequently used by educators.

Educators find themselves in the position of having to lobby Congress and the FCC. Among the uses for ITFS they cite are: bringing graduate courses in engineering to the offices of students in high-tech industries (as offered by Stanford and Illinois Institute of Technology, among others); linking hospitals in order to share the costs of education for personnel and patients; distributing ITV to public schools and linking campuses in San Diego; operating statewide ITFS systems in Oklahoma, Indiana, and South Carolina; and generally, bringing in educational programming.

Some companies view the availability of graduate courses delivered via ITFS as a significant recruiting tool. Some higher education institutions, including Stanford, University of Maryland, and Arizona State, see ITFS as a way to enlarge their enrollment base. On-site training by ITFS is particularly suited the needs of high-tech corporations in terms of convenience and cost.

Anderton, Ray L. **"Shipboard CCTV for Globe-Girdling Students."** *E-ITV,* April 1983, pp. 86-88. An overview of a program sponsored by the University of Pittsburgh and the Institute for Shipboard Education that provides undergraduate courses to students via closed-circuit television.

Andrade, Stephen C. and Ronald M. Brunell. **"Video for Teaching American Teachers Abroad."** *E-ITV,* April 1983, pp. 55-58. A discussion of a professional video training program for teachers abroad.

"Annual Directory of Production Houses." *E-ITV,* May 1983, pp. 53-78. A listing of over 650 production companies and others that provide video services.

Bliss, Joan; M. Goater; C. Jones; and A.W. Bates. **"Piaget's Theories and Some Possible Implications for Educational Television."** *Journal of Educational Television,* Vol. 9 (1983), 33-46. An analysis of theories on thinking and mental development and their implications for producing educational television.

Hodge, Charron. **"Successful LPTV Gathering on West Coast Signals Widespread Interest in Low Power."** *LPTV Currents,* March 1983, pp. 1,4. A report on the LPTV West Conference held in California, where participants discussed the commercial viability of this broadcast medium.

"ITFS for Distance Learning." *E-ITV,* May 1983, pp. 92-95. A profile of the ITFS system at Florida Junior College in Jacksonville, which serves distance learners.

"The MDS-ITFS Struggle." *Broadcasting,* March 28, 1983, pp. 35, 36. A review of the issues involved in a proposal to reallocate ITFS channels to multichannel MDS.

Meigs, James. **"Corporate TV at the Crossroads."** *Videography,* May 1983, pp. 32-33. A survey of corporate video facilities across the country.

"1983 Directory/Buyers' Guide." *Cable Communications,* March 1983, pp. 18-60. A guide to suppliers of broadcast television products and services in the U.S. and Canada.

Ries, Al and Jack Trout. **"The Eye vs. the Ear."** *Advertising Age,* March 14, 1983, pp. M27-28. An examination of the construction of television ads that demonstrates that visual memory is shorter than memory for auditory information.

Scully, Malcolm G. **"FCC May Turn Over Instructional Channels to Pay-TV Operators."** *Chronicle of Higher Education,* March 23, 1983, p. 7. A discussion of the possible reallocation of ITFS channels to commercial broadcasters and opposition to the proposal by members of the higher education community.

Taylor, Nat. **"Teaching Arts by TV: The Delights of Variety."** *Open Line,* March 1983, pp. 3-4. A commentary on the use and effectiveness of courses in the arts delivered via broadcast television at the British Open University.

Wyche, Mark C. and Dary Stamier. **"The Local Promise of Low Power TV: A Pipe Dream?"** *Satellite Communications,* April 1983, pp. 30-33. An analysis of market influences in the development of low-power television service.

Courses Announced for 1984 Adult Learning Schedule

The Public Broadcasting Service recently announced its spring 1984 schedule, giving colleges and public television stations 10 months lead time to promote the following course offerings:

- "The New Literacy," the first Annenberg-funded project in national distribution, is an up-to-date survey of electronic data processing, computer hardware and software systems, and recent developments in the field. The 26 half-hour television programs, produced by the Corporation for Community College Television, are complemented by a nationally recognized text, student study guide, and faculty manual.
- "The Business of Management" provides a valuable introduction to the concepts of management and business. Produced by the Corporation for Community College Television, this course covers planning and organizing, staffing and directing, controlling and motivating, and other management topics.
- "America: The Second Century" examines and interprets the economic, political, diplomatic, military, and social developments that have shaped and continue to shape the United States in the 20th century. Produced by Dallas County Community College District, this course takes a thematic rather than a chronological approach to history.
- The myriad changes affecting contemporary life are explored in "Focus On Society," a principles of sociology course produced by Dallas County Community College District. Through interviews with renowned social scientists and close examination of the elements of society undergoing change, this course helps students gain an understanding of the complexities of modern life.
- Produced by Coast Telecourses, "Humanities Through the Arts" examines several art forms from four perspectives: historical content, elements of the

art, form and meaning, and criticism and evaluation.

- "Oceanus" explores the marine environment as a unique feature of the planet Earth. This course, produced by the Corporation for Community College Television, investigates areas of intense public and scientific concern, such as pollution, exploitation of marine resources, and weather forecasting.
- In "Personal Finance and Money Management," a course produced by the Corporation for Community College Television, students are guided through the financial maze of budgeting and buying, home ownership, income tax and investments, and insurance, wills, and trusts.
- The complexity of human behavior is unravelled in "Understanding Human Behavior," an introduction to psychology course produced by Coast Telecourses. It surveys the psychological, intra-psychic, and social-behavioral perspectives on human thought and actions, motivation, learning, memory, personality theory, and other topics. A key design element in the course is James McConnell's book, *Understanding Human Behavior: An Introduction to Psychology.*
- Some of contemporary literature's foremost writers are featured in "Writer's Workshop," a course for experienced and aspiring writers. This course was developed by the University of South Carolina and South Carolina ETV.

Colleges interested in licensing these courses can obtain further information by contacting the adult learning liaison at their local public television station or the PBS Adult Learning Service, 475 L'Enfant Plaza SW, Washington, DC 20024; 202/488-5360. A fact sheet and telecourse information kit, preview packets, and videocassettes of programs are available to help colleges review and evaluate the courses.

Cable Television

Buske, Sue Miller. **"Senate Bill Threatens Cable Access Programming."** *Video User,* April 1983, pp. 1, 5. An examination of a cable bill introduced in the Senate that limits local and state authority over cable services.

Greenberg, Pam. **"Getting Everybody Into the Act."** *Cable Television Business,* May 1, 1983, pp. 24-29. A discussion of outreach programs by cable operators to involve community groups in access programming.

Hill, Arthur M., II. **"Localism's Role in Renewal."** *Cable Television Business,* May 1, 1983, pp. 34-37. A guide for cable operators to negotiating franchise renewals through community involvement.

Kirk, Brian. **"Cable Access in Boston: Developing a Model System."** *Access,* April 1983, pp. 1, 5. An examination of the cable franchising process in Boston.

Leddy, Craig. **"Capitol Gains."** *CableVision Plus,* April 25, 1983, pp. 49-58. A discussion of the lobbying efforts of the cable industry in state legislatures.

Livingston, Victor. **"LO 101."** *CableVision Plus,* April 4, 1983, pp. 94-96. A profile of an intern program at UA-Columbia Cablevision in New Rochelle, New York, that involves colleges and high school students in community access programming.

"University of Maryland at Baltimore Prepares for Cable Television." *Telecom Update,* Spring 1983, pp. 5-6. A report on a task force organized at the University of Maryland to assess how the city's cable access channels can serve the institution.

Wheeler, Thomas. **"Time for Legislation for Promoting Competition by Cable Deregulation."** *Communication News,* April 1983, pp. 68-69. A review of the issues surrounding the debate over new cable legislation proposed in Congress.

Pennsylvania Tests New System for Educational Cable Television

Public access to educational cable television programming throughout the state of Pennsylvania moves a step closer with the successful completion of equipment testing of a microwave distribution system.

The system, built for the Pennsylvania Educational Communications System (PECS) by the Hughes Aircraft Company, will bring educational programming to the major portion of the state. Pennsylvania State University provides instruction for the educational system, called PENNARAMA, and coordinates efforts of the higher education institutions that are interested in using the system.

Hughes conducted the testing program at their facility in Torrance, California, duplicating the actual network layout. Thus, Hughes and PECS engineers were able to "travel" on the network a hundred miles in a few seconds. This pre-test concept should prove to have significant cost-saving benefits by the time the network is operational. It permits verification of performance and system test-point levels in a matter of hours instead of days or weeks.

The Pennsylvania system represents the first large-scale deployment of the Hughes equipment configured for FM transmission. The equipment, in use by CATV operators since the late 1960s, has traditionally used AM modulation schemes for local signal distribution. The new distribution network is expected to be in operation later this year. Long-range plans call for an eventual multichannel bi-directorial network reaching more than 1.5 million subscribers via microwave and cable distribution.

Videotext/Teletext

"San Francisco State's Videotex 'Party Line,'" by Harold A. Layer, *E·ITV,* March 1983, pp. 68-71.

San Francisco State initiated an autotext information service in 1981 when Viacom Cablevision of San Francisco dedicated Channel 35 to the university.

The service uses a Texscan/MSI character generator and operates 24 hours a day, 7 days a week, except when preempted by live programming or films and other pre-recorded programs.

SFSU's service allows home cable subscribers to access via touch-tone telephone the university's non-interactive system. Viewers can receive information from the student newspaper, and further news about sports events, arts and cultural events, and courses and workshops offered by the university.

A significant feature of the system is that it allows users to access information without using decoders.

A modification of the SFSU service occurred in April 1982, when "SFSU/Cabletext" was inaugurated—a combined autotext/videotext information service. Users can access information on Channel 35 via their telephones when priority programs are not running. Most of the videotext users are community residents; calls run between 300 and 900 per day.

Initial videotext categories include the program schedules of the campus radio and television stations, library periodical listings by subject, a videotext student newspaper, simple animated graphics directed at children, and the university's "electric gallery," which exhibits videotext art.

"SFSU/Cablenet" is a continuing university cable service for the community. Its content and search strategies will evolve as faculty and students study its alternative features.

"Battle Over Teletext." *Broadcasting,* March 21, 1983, pp. 156-58. An examination of the competition between two incompatible teletext systems to become the national standard.

"The Coming Boom in Home Banking." *Broadcasting,* May 9, 1983, pp. 74-75. A discussion of a study that predicts tremendous growth in home banking services in the next decade.

"Electronic Newspapers Continue to Proliferate." *CableAge,* May 9, 1983, pp. 12-15. A look at the trend among several newspapers to offer information services via cable.

"French Government to Give Teletext Industry a Push." *Broadcasting,* May 9, 1983, p. 74. A review of the decision by the French government to subsidize the marketing of teletext decoders to consumers.

Hecht, Jeff. **"Information Services Search for Identity."** *High Technology,* May 1983, pp. 58-65. An explanation of the variety of home information services, problems with each available system, and costs.

McGlone, Jeff. **"Videotext Begets A New Type of Creative Director."** *Broadcasting,* May 9, 1983, p. 24. A commentary on the effects of the videotext revolution upon creative directors in the advertising industry.

Mermigas, Diane and Richard L. Gordon. **"Teletext Reaction is Mixed."** *Electronic Media,* April 7, 1983, pp. 1-2. A review of reactions by broadcasters to the FCC's decision against a "must carry" rule for cable operators to transmit commercial networks' teletext services.

Needle, David. **"Prestel Franchises Videotext Centers."** *InfoWorld,* April 25, 1983, pp. 4-5. A report on an effort by Prestel to improve its database.

Reiss, Craig. **"CBS Squares Off for Teletext Line."** *Electronic Media,* April 14, 1983, p. 16. A discussion of CBS' reaction to a denial by the FCC of its request to require cable systems to carry teletext services.

Rosenthal, Edmond M. **"Cable Videotext, Teletext Moving Slowly to Market."** *CableAge,* May 9, 1983, pp. 6-10. An examination of the difficulties encountered by two-way interactive videotext systems contributing to their slow growth in the marketplace.

Stoller, David. **"Testing the Waters."** *CableVision,* April 18, 1983, pp. 110-23. An update on the development and market growth of videotext and teletext services.

"A Surprising Eagerness to Sign Up for Videotex." *Business Week,* April 25, 1983, p. 108. A report on the prospects for a strong consumer market for videotext services in the future.

"Teletext: Both Competition and Money Will Be Plentiful." *Broadcasting,* April 18, 1983, pp. 102-103. A review of forecasts for the teletext industry by participants at the National Association of Broadcasters convention.

Satellites

"Conversation with Nathaniel Kwit." *Videography* May 1983, pp. 56-66. An interview with the president of United Satellite Communications, Inc., a company that plans to offer the first DBS programming service.

"Earth Stations for Rural Communication Systems." *Uplink,* March 1983, pp. 1-2, 10. A description of a project being conducted by the Rural Satellite Program to design a high quality and economical earth station.

"Guide to Satellite Earth Stations." *Videography,* May 1983, pp. 49-54. A listing of satellite hardware having applications ranging from backyard to broadcast use for domestic classification.

Macy, Ruth. **"The DBS Frontier."** *Video Systems,* March 1983, pp. 38-50. A discussion of the development of direct broadcast satellites and the eight companies that are proposing programming services.

Morgan, Walter L. **"Satellite Performance Reference Chart—1983."** *Satellite Communications,* March 1983, pp. 36-38. A chart demonstrating the state of satellite communications today.

"Two Different Directions on DBS." *Broadcasting,* May 9, 1983, p. 34. A report on the results of two meetings on DBS supporting opposing positions on international access to orbital slots and frequencies.

Teleconferencing

Cook, Bob. **"Study Finds Growth Rate of Teleconferencing Slows."** *Electronic Media,* March 31, 1983, p. 21. A discussion of a study that indicates slackening growth of teleconferencing due to outdated systems that lack two-way visual communications.

Elton, Martin C.J. and David Boomstein. **"Planning the Video in Videoconferencing."** *Video User,* April 1983, pp. 15-16. A guide to transmitting effective visual images in a teleconference.

"Divestiture: Its Impact on Teleconferencing." *Telespan,* May 15, 1983, pp. 1-6. A special supplement devoted to explaining the impact of the AT&T divestiture upon users of teleconferencing.

Dvorin, Diane. **"Tele-Skills: The People Factor in Teleconferencing."** *Satellite Communications,* May 1983, pp. 44-45. A description of teleconferencing and workshops designed to train individuals in strategies for effective communications in electronic meetings.

Needle, David. **"IRD Study Suggests Ways to Make Teleconferencing Attractive."** *InfoWorld,* April 25, 1983, pp. 3-4. An analysis of a research report that outlines obstacles to the rapid growth of teleconferencing.

Persch, Bill. **"Mass. Mutual's First Teleconference."** *E·ITV,* March 1983, pp. 22, 24, 26. An examination of Massachusetts Mutual Life Insurance Company's teleconference to inform employees about policy improvements.

"Teleconferencing Report." *E·ITV,* April 1983, pp. 20-22. A series of reports on recent teleconferences, reports, books, and meetings.

"Teleconferencing Tips From AHSA." *E·ITV,* May 1983, pp. 34-36. A guide from the American Home Sewing Association on reproducing teleconferences.

Tilson, William and Robert Patterson. **"Finding Your Videoconference Coordinator."** *Video Systems,* March 1983, pp. 24-36. An explanation of how to select a company to coordinate networking and facilities for an in-house production.

"Videoconferencing Report." *Videography,* May 1983, pp. 28-31. An overview of videoconferencing services and hardware.

Teleconferencing Technology and Applications, by Lorne Parker and Christine H. Olgren. Artech House Inc. [610 Washington St., Dedham, MA 02026]. 350 pp. 1983. $45.

An examination of teleconferencing technology, applications, and major trends shaping its future. This book includes 25 in-depth case studies and information on over 160 organizations involved in teleconferencing.

Research Program To Study Market For Teleconferencing

A major research program on teleconferencing applications and markets has been announced as a joint venture of the Center for Interactive Programs of the University of Wisconsin-Madison, and Communications Studies & Planning, Ltd., London, England. The research, budgeted at $750,000, will be the largest international investigation of teleconferencing yet conducted.

The goal of the project is to provide concrete data for the development of vendor strategies and user requirements. It will undertake detailed measures of existing use and assessments of teleconferencing potential in North America and Europe in 1990, with analyses and forecasts of the total market, market segments, and business opportunities.

Included will be a comprehensive study of users of video, audiographic, and audio teleconferencing systems. It will determine applications, levels of use, impact, and factors necessary to successful implementation, among other variables. The program will also include a market study of non-users and a survey of teleconferencing technologies and suppliers to assess potential markets and the industry's status.

The research findings will be of direct interest to equipment and service vendors in domestic and international markets, as well as to affected industries such as hotels and airlines. Subscribers to the study will receive strategic reports and consultation and conference attendance privileges..

The project will be directed jointly by Lorne A. Parker, director of the Center for Interactive Programs (CIP), and Stephen Connell, a director of Communications Studies & Planning (CS&P). They will head an international research team with expertise in teleconferencing and market forecasting.

"The research program comes at a critical time for teleconferencing users and vendors," said Parker. "There is a real need to understand teleconferencing and how to implement it successfully if its full potential is to be realized."

He added, "Preliminary data from the first part of our study shows that 69 percent of the current users will expand their use of teleconferencing in the next year, and 82 percent plan to increase their investment by 1985. However, as a new industry, teleconferencing has penetrated less than 10 percent of the potential market, even though current applications show very positive results."

For additional information contact Lorne Parker, Center for Interactive Programs, University of Wisconsin-Extension, Old Radio Hall, 975 Observatory Drive, Madison, WI 53706; 608/262-4342.

Videodisc

"Army Heats Up Industrial Disc Battle." *Video User*, April 1983, pp. 1, 13. A report on the Army's plan to purchase 40,000 videodisc systems for training personnel.

Heiss, Michael. **"Guide to Videodisc Systems."** *Videography*, April 1983, pp. 37-39. A listing of companies involved in the manufacture of LaserVision and CED format videodiscs.

Mueller, Robert. **"The Promise of Videodisc."** *Videodisc/Videotex*, Spring 1983, pp. 112-14. A review of the role that Sony Communications has played in the development of videodiscs.

Stewart, Scott. **"Videodisc R_x: A Survey of Health Care Applications."** *Videodisc/Videotex*, Spring 1983, pp. 115-26. An explanation of videodisc technology and several current health-related videodisc projects.

Rosen, H. Jeffrey. **"What Guides the Videodisc Marketplace?"** *Videodisc News*, March 1983, pp. 10-11. A discussion of the videodisc market and factors that will determine its future growth.

Stokes, Judi Tereno. **"American Bell Installs 200-Player Video Disc Network for Training."** *Video User*, March 1983, pp. 1, 17. A report on the installation of an interactive videodisc network being used to train American Bell sales representatives.

Sustik, Joan M. **"The Videodisc in Higher Education: A Technological Resource."** *AEDS Monitor*, March/April 1983, pp. 21-23. An adaptation of an earlier article providing an introduction to videodisc technology.

"Videodiscs Projects Directory." *Videodisc/Videotex*, Vol. 3 (Winter 1983), 59-60. A compilation of various applications of videodisc and optical disc technology, containing project titles, sponsors and producers, and details on uses and equipment.

Wiegand, Ingrid. **"Video Disc: State of the Technology, 1983."** *Video User*, March 1983, pp. 14-15. An overview of successful and failed videodisc formats.

Producing Interactive Videodiscs, Optical Recording Project. 3M [223-5S, 3M Center, St. Paul, MN 55144]. 1982. $495.

An instructional program containing a two-sided interactive LV optical videodisc, a loose-leaf manual on the technology, and a post-production manual on premastering Scotch discs. This kit is suggested for employee training, as a sales tool, or as a reference for users and producers. The disc itself presents tests and answers behind each chapter and includes a glossary of terms on each side.

Study Examines Business Applications Of Videodiscs

Battelle Columbus Laboratories is engaged in a research program to acquire, develop, and disseminate information on videodiscs. Researchers plan to study business applications of the technology and to publish the results on an interactive videodisc. Participants will be able to experiment with a sample disc to learn what is involved in the storage and retrieval of material.

Plans for the research include an overview of videodisc technology and production, gathered through a detailed literature search, telephone interviews, and field visits. The proposed study will also investigate the impact of small computers on the future of videodiscs.

Demonstrating software, data formats, storage, levels and types of interactivity, as well as indexing and information presentation, the resulting research disc will identify the optimum criteria for various applications of the technology. The disc will use its branching capability to allow participants to review the results at their level of interest, from general to specific concepts.

Battelle estimates that the program will be complete within a year's time. For further details, contact Larry Scurlock at Battelle-Columbus, 505 King Avenue, Columbus, OH 43210; 614/424-6391.

Videotape

Cartwright, Steve R. **"Pima County Saves Money Training Police with TV."** *E-ITV*, April 1983, pp. 81-85. A look at the Pima County Sheriff's Department in Tucson, Arizona, and its use of videotapes for training, communications, surveillance, and collecting evidence.

Danna, Sammy R. **"ITV for Training at a Mental Health Center."** *E·ITV*, May 1983, pp. 79-84, 90-91. A profile of a program in a Winston-Salem, N.C., mental health facility that produces videotapes for patient education and outreach.

Lovece, Frank. **"VCR Handbook: A Buyer's Guide to Videocassette Recorders."** *Electronic Learning*, April 1983, pp. 61-66. A guide to selecting videocassette recorders that compares major brands and their features.

"Video Helps a Bank Serve Its Customers." *E·ITV*, May 1983, pp. 102-103. A look at an Idaho bank's use of videotape for employee training.

COMPUSCAN

Articles, books, programs and projects involving the uses of computer technologies.

Computers

"Colleges Struggling to Cope With the Computer Age," by Robert I. Jacobson, *Chronicle of Higher Education*, March 30, 1983, pp. 1, 10.

Academe is facing the advent of the computer age with both enthusiasm and trepidation. Although colleges and universities can see the potential of microcomputers in particular, they are often discovering that they don't have the money, personnel, or plans to take advantage of the technology.

Many officials believe they must radically change their perceptions of computer technology for administrative or scholarly purposes, especially in terms of the role of a central campus computer in trying to satisfy all the needs of the people on campus. One problem is that so many individuals, reacting to the frustration of trying to get specific information out of the campus mainframe, are proposing their own ideas for equipment needed.

What is really needed, however, is an overall campus computing plan that involves long-term goals and priorities. Decisions must be made regarding the use of computers for administrative or instructional applications, data processing or word processing, etc. Most important is determining institutional applications before selecting hardware and software.

Information technology experts suggest that colleges would be unwise to wait to purchase or lease some kind of equipment because it ultimately produces such savings through increased productivity and efficiency. Other recommendations include not feeling pressured to have "the latest thing" if what an institution has now fits its needs. Finally, the experts note that it ultimately costs less to buy commercial packages than to ask campus programmers to develop their own.

Barger, Robert Newton. **"The Computer as a Humanizing Influence in Education."** *T.H.E. Journal*, May 1983, pp. 109-111. A commentary on how computers enhance such human traits such as autonomy, rationality, and creativity in educational settings.

Bonham, George W. **"Computer Mania: Academe's Inadequate Response to the Implications of the New Technology."** *Chronicle of Higher Education*, March 30, 1983, pg. 72. An argument for critical analysis of the long-term educational significance of computers.

Brady, John P., Jr. **"Leapfrog Technology in the Community College."** *T.H.E. Journal*, April 1983, pp. 92-94, 100. A profile of campus-wide utilization of computers and the computer-related training program for students at Orange Coast College in Costa Mesa, Calif.

Bright, George W. **"Explaining the Efficiency of Computer-Assisted Instruction."** *AEDS Journal*, Vol. 16 (Spring 1983), 114-65. An analysis of computer-assisted instruction in terms of its efficiency as compared to traditional instruction.

Carruthers, Robert L., Jr. **"Selecting A Microcomputer: A Procedure for the Novice and the Expert."** *AEDS Monitor*, March/April 1983, pp. 11, 30. A six-step plan for selecting a microcomputer.

Faflick, Phillip, et al. **"How to Soup Up a Filing System."** *Time*, March 28, 1983, p. 74. A report on the growing use of microcomputer databases for personal filing systems.

Farrell, Charles S. **"The Computerization of Carnegie-Mellon."** *Chronicle of Higher Education*, March 30, 1983, pp. 6, 7. An overview of computer use at Carnegie-Mellon University, which plans to equip all students, staff, and faculty with personal computers.

"EDUCOM Forms Literacy Project." *Edunet News*, Spring 1983, pp. 3, 7. A report on the formation of a project to provide information and facilitate computer literacy programs at colleges and universities.

Federico, Pat-Anthony. **"Changes in the Cognitive Components of Achievements as Students Proceed Through Computer-Managed Instruction."** *Journal of Computer-Based Instruction*, Vol. 9 (Spring 1983), 156-83. A study of differences in cognitive characteristics of learning for Navy trainees completing a computer-managed course in electricity and electronics.

Fuchs, Ira H. **"Bitnet—Because It's Time."** *Perspectives in Computing*, March 1983, pp. 16-27. A review of the development of a network of university microcomputers and word processing users linked electronically to colleagues at other locations.

Harmon, Maryl. **"Computer Literacy: A Teacher Challenge."** *New York Times*, March 27, 1983 pp. 27-28. An overview of the field of computer training, and the opportunities for individuals who teach computer literacy.

Hofstetter, Fred. T. **"The Cost of PLATO in a University Environment."** *Journal of Computer-Based Instruction*, Vol. 9 (Spring 1983), 148-55. An analysis of capital and ongoing costs as compared to projected costs for the University of Delaware's PLATO system.

Jernstedt, G. Christian. **"Computer Enhanced Collaborative Learning: A New Technology for Education."** *T.H.E. Journal*, May 1983, pp. 96-101. A discussion of the divergent technology and humanistic perspectives in teaching and the need for a union between the two to improve the learning process.

Kearsley, Greg and Beverly Hunter. **"Electronic Education."** *High Technology*, April 1983, pp. 38-44. An examination of computer-assisted education and problems of quality software, computer literate teachers, and lack of a sound research base for the field.

Kenealy, Patrick. **"Hard Disks for Microcomputer: How to Tell if You Need One."** *Electronic Learning,* April 1983, pp. 30-38. An explanation of hard disks and their advantages for information storage, including a guide to selecting a system.

Mace, Scott. **"Gary Bitter, Computer-Education Activist."** *InfoWorld,* May 2, 1983, pp. 13, 15-16. A profile of an educator at Arizona State University who is a leading activist in computer-based learning.

Magarrell, Jack. **"Dearth of New 'Supercomputers' Called Threat to U.S. Leadership in Science and Technology."** *Chronicle of Higher Education,* March 30, 1983, pp. 8-9. An examination of the lack of supercomputers at U.S. universities to meet the needs of science, engineering, and technology.

Moore, William R. and Robert L. Baxter. **"Microcomputers Enhance Engineering Technology Instruction."** *Engineering Education,* May 1983, pp. 786-89. An overview of microcomputers in use at Western Kentucky University's engineering technology department.

Pagliaro, Louis Anthony. **"CAI in Pharmacology: Student Academic Performance and Instructional Interactions."** *Journal of Computer-Based Instruction,* Vol. 9 (Spring 1983), 131-44. A description of a research project at the University of Alberta to measure the effects of CAI in pharmacology instruction.

Reed, Sally. **"Technology Still a Novice in Classrooms."** *New York Times,* March 27, 1983, p. 61. A report on several studies that are tracking the use of computers in education, and several institutions that are keeping up with the technology.

Senese, Donald J. **"Computer Vital for Education."** *AEDS Monitor,* March/April 1983, pp. 2, 3. A look at the implications of computers in our educational system.

Traub, James. **"Why Johnny Can't Program."** *Channels,* March/April 1983, pp. 39-46. A view of how computers are used in education, the advantages and drawbacks.

Wallisch, William J. **"Change: Like It or Not!"** *T.H.E. Journal,* May 1983, pp. 102-105. A discussion of faculty as the change agent in the electronic revolution in higher education.

Computer-Based Training Starter Kit, compiled by the Federal Interagency Group for Computer-Based Training. Available from Internal Revenue Service [Services Section PM:HR:T:S, 2221 Jefferson Davis Hwy., Arlington, VA 22202]. 1983. 85 pp. Free.

A reference for implementation of computer-based training programs. This handbook outlines a systematic process of needs assessment, technical components, implementation planning, and development of prototype projects for training that is delivered by computer or managed by computer.

The McGraw-Hill Computer Handbook. McGraw-Hill Book Co. [1221 Avenue of Americas, New York, NY 10020]. 992 pp. $79.50 (prepaid).

An encyclopedia of computer technology, from basic computer theory to programming languages and robotics. Written with the novice in mind, this book includes illustrations and an extensive index and glossary to answer practically any question on computers.

Microcomputers for Adult Learning, edited by David G. Gueulette. Follett Publishing Company, [1010 W. Washington Blvd., Chicago, IL 60607]. 240 pp. $17.95.

An anthology of articles on the use of computers for adult education. This book examines adult learning theories in relationship to computers, appropriate models for the application of the technology, how to evaluate software, and resources for information on micros.

Computer Graphics Used To Teach Engineering

A team of researchers at New Jersey Institute of Technology is investigating new ways to use a computer display as a "dynamic blackboard" to teach chemical engineering students. A grant of $35,000 from the National Science Foundation and a gift of $10,000 worth of equipment from IBM Corporation supports their work over the next three and a half years. The goal of the research is to develop microcomputer programming for use in teaching chemistry and chemical engineering to sophomore university students.

The computer display is termed the "dynamic blackboard" because it can present information with movement, speed, color, and precision, while traditional chalk drawings are static and therefore cannot always show intricate relationships precisely.

Computer graphics present complicated information quickly and accurately, using color and animation to show relationships and results. James Grow, assistant professor of chemistry at NJIT, hopes the research and the resulting new computer programs increase student understanding and retention.

Gordon Lewandowski, assistant professor of chemical engineering, and Richard Parker, professor of chemistry, also are involved in the research project at NJIT.

This research team is one of 58 similar groups at universities across the country named by the National Science Foundation to conduct experimental projects aimed at improving science and engineering education at the high school and early college levels. Among other colleges included in the NSF program are Harvard, University of Pennsylvania, University of Pittsburgh, Purdue, Carnegie-Mellon, Notre Dame, and Michigan State. Research results will be shared among the universities participating in the program.

Corporations that have donated equipment to the nationwide program, in addition to IBM, are Digital Equipment Corporation, Radio Shack, Atari, and Apple. For more information contact Phyllis Miller, NJIT, 323 High Street, Newark, NJ 07102.

Computer Camp for ITV Professionals

This summer Kentucky Educational Television hosts a microcomputer camp for instructional television and media professionals conducted by the Southern Educational Communications Association (SECA) Center for Instructional Communications and the SECA Elementary/Secondary Council.

The workshop is aimed at helping instructional television and media staffs promote ITV/film and microcomputers in education. In a survey of SECA members, computer technology emerged as the favorite proposed topic for a summer workshop. Another survey, asking members how and if they used computers, helped decide the specifics of the sessions.

One session allows novices to have hands-on training and practice with microcomputers and to see instructional and management programs related to ITV. Later, participants will view demonstrations of state-of-the-art interactive TV-computer programs. A day-long session will cover recent developments in hardware and software, review and evaluation services, and distribution systems.

A two-hour teleconference recapping the workshop and introducing new films is tentatively planned for those unable to attend the camp. For more information, contact Reta Richardson at SECA, P.O. Box 5966, Columbia, SC 29250; 803/799-5517.

Interactive Video

Allen, David. **"Sony's Marriage of Microcomputer and Videodisc."** *Videography*, May 1983, pp. 81-87. A description of Sony's interactive videodisc system—the first to have all its components manufactured by one company.

Floyd, Steve and Beth Floyd. **"Budgeting for An Interactive Video Program."** *Video User*, April 1983, pp. 18, 19. A comparison of several approaches to planning a budget for an interactive video production.

Floyd, Steve and Beth Floyd. **"Planning and Implementing Interactive Programs."** *Video User*, March 1983, pp. 11, 22. An outline for preparing a presentation for funding and approval of interactive programs.

Hon, David. **"A Peripheral Concern."** *Video User*, March 1983, p. 5. An examination of the peripheral aspects of interactive video, such as keyboards.

Roden, Steve, Mary Jane Ward, and Larry Kelbaugh. **"Creating Interactive Discs for Florida's Largest Employer."** *Video User*, March 1983, pp. 23-24. A profile of the production of an interactive videodisc series for employee training at the Florida State Health and Rehabilitative Services agency.

Wiegand, Ingrid. **"Life After Disc: The Alternate Route to Interactive Video."** *Video User*, April 1983, p. 14. A survey of companies that provide hardware, software, and expertise for industrial and educational applications of interactive videodiscs.

Periodicals

Abstracts and bibliographics appearing in this issue of TELESCAN cover the period between March 15, 1983 and May 15, 1983.

Open Line
British Open University
Performance and Instruction Journal
National Society for Performance
and Instruction
Uplink
AID Rural Satellite Program

MACROSCAN

Articles, books, resource documents, programs and projects involving the uses of combined technologies.

Craig, Robert P. **"Educational Technology: An Exercise in Freedom?"** *National Society for Performance and Instruction Journal*, March 1983, p. 28. A commentary supporting the view that educational technology reduces alienation because it produces tools and procedures to reach instructional goals determined by humans.

Frye, John. **"The Impact of Telecommunications."** *T.H.E. Journal*, April 1983, pp. 87-90. A discussion of the range of opportunities offered by new telecommunications technologies and what is needed for their most effective use in business and education.

Gasaway, Laura N. **"Nonprint Works and Copyright in Special Libraries."** *Special Libraries*, April 1983, pp. 156-70. An overview and analysis of copyright law as it pertains to computer programs, databases, and electronic publishing.

"Lotteries for LPTV: Go-Ahead for Teletext." *Broadcasting*, April 4, 1983, pp. 31-32. A review of FCC decisions on low-power television and teletext.

Welling, Joseph. **"Setting Communications Policy: Where Are the Colleges?"** *Chronicle of Higher Education*, April 27, 1983, p. 56. A discussion of the role of higher education institutions and national organizations in helping to determine public policy on telecommunications issues.

Wiley, Don. **"Video: The Eye of the Information Age Focuses on Entertainment Plus Business."** *Communications News*, April 1983, p. 56. An introduction to a series of reports on video technologies, the major issues surrounding them, and new applications.

Libraries and Librarians in An Age of Electronics, by F.W. Lancaster. Information Resources Press [1700 North Moore St., Arlington, VA 22209]. 1982. 229 pp. $22.50.

A collection of essays on technological trends over the last 20 years that will affect the ways in which libraries catalogue and disseminate information. This book includes an overview of the applications of technologies such as computer conferencing, electronic mail, online information retrieval, and interactive television.

Telematics and Government, by Dan Schiller. Ablex Publishing Corporation [355 Chestnut St., Norwood, NJ 07648]. 1982. 256 pp. $24.50 clothbound.

An assessment of the policymaking role of government in the development of new information technologies in the U.S. and internationally. This book also looks at the government's role as a market force in the hardware and services area.

Project Slate Assists States in Planning for Technology

To assist state education policymakers in systematic planning for the use of electronic technologies, the U.S. Department of Education has awarded Education Turnkey Systems, Inc. a contract to operate Project Slate. The project will identify states for participation in workshops on establishing criteria and standards for quality software development, mechanisms for software distribution, staff development, and policies and procedures to facilitate technology use. Participants will be linked by the project's electronic mail/bulletin board for access to planning resources and to interact with one another.

For more information, contact Charles Blaschke, president, Education Turnkey Systems Inc., 256 North Washington St., Falls Church, VA 22046.

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Satellites a National Resource for Corporate America

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tion that is associated with a classroom in which the instructor and the student can have instant and personalized interchange. However, the tremendous growth in education and training in corporate America requires more than the number of qualified instructors available for such personalized attention. This has been experienced on the college campus and even in the high school, where a television set has replaced the in-room instructor, especially where large lecture halls are unavailable.

Of late we have seen a turning toward the video cassette or the video address whereby a highly qualified person distributes knowledge or information to a large group. For large companies having many operational centers, the video cassette is an economic alternative to a traveling lecturer. The cassette also offers the convenience of scheduling to meet the needs of the local operational center, and it can be run several times over to assist in the learning process. If properly structured—and this is a subject I'll touch on shortly—the video cassette can be a very effective tool in the education and training of company personnel. If properly structured, it provides a standardization that is not available through multiple instructors at different locations: Everybody gets the same message whether they're taking the course in Peoria or Portland.

Teleconferencing to the Fore

Even more recently, the concept of the teleconference has come to the fore. Using either satellites or land lines, the teleconference can encompass one-way video with telephone call back, or the more costly two-way video. If a large number of people must be accessed at the same time with the same message, then the videoconference could prove more cost-effective than the video cassette.

While the teleconference or videoconference is the subject of much coverage in the press, its application as an educational or instructional tool is much more limited. Here I must be careful, because here I shall have to closely identify what is instructional and what is simply a one-way message.

Certainly the concept of formal training via videoconferencing is easy enough to define. Facilities are booked, a trainer is booked, classroom locations are booked around the country and students are assembled to learn in a training or educational environment. But what about new product introductions such as used by Ford Motor Company to introduce its new experimental automobile, or Ford's introduction of the Ranger truck? In both instances, 38 cities were accessed in the videoconference net, and participants numbered about 18,000. Is it education and training? Or is it simply a new product introduction to beef up morale and get the dealers excited?

Let me cite another example. TRW recently pulled together a panel of experts on the Bankruptcy Reform Act. These experts provided via a teleconference information on the Act not only to customers of TRW's credit data division, but to bankers, to finance company managers, and to credit officers of all types as well. There were 28 cities in the network; participants numbered about 18,000. I could make a strong case that this was an educational program, but it was not confined to TRW employees. Clearly the intent was at least partially to develop goodwill toward TRW.

Other examples fall closer to the mark. One instance is Allied Van Lines, which in 1981 and 1982 conducted teleconferences presenting to dealers and employees the firm's senior management strategies on operating in a deregulated environment. This teleconference reached 1,300 employees in 37 cities in 1981, and 1,600 employees in 1982. . . .

Professional associations can also use teleconferencing to further the education of their members. This is exemplified by a 1981 teleconference sponsored by the American Bar Association and the American Law Institute. A satellite-distributed television course for lawyers in 10 cities was made available at a cost of $125 per participant; far less than it would have cost for the lawyers to travel to a central location. This suggests that other professional organizations in management, accounting and finance, and in insurance, could assemble and distribute via satellite material of broad interest to corporate management. . . .

Only a Beginning

I could continue to cite examples, and we could continue to debate whether or not the examples are in the nature of education and training. However, my research leads me to believe that we are only beginning to tap the satellite as a source of distributing educational and training material to corporate America. What we see to date is more of an information exchange, with the bulk of the information going one way. And so, while encouraged at reports that teleconferencing could grow from a $50 million market in 1980 to a $220 million market in 1985, my feelings are that most of this money will be used in what we could call the "traditional" aspects of message delivery from headquarters to the field—not for satisfying the corporation's requirement for education and training of employees.

If education and training by satellite is truly a national resource, then we should address two important considerations bearing on the utilization of satellites for corporate training of employees. One consideration is economic; the other is the structural aspect of information delivery. My remaining remarks will deal with these two considerations as related to education and training requirements that are either job-related or remedial in nature.

First, let us look at some economic aspects of education and training via satellite. Certainly it is easy to get excited about setting up a satellite-distributed curriculum. There is still a certain magic to the word satellite . . . evoking an aura of futurism, of being on the "cutting edge of technology," and calling for buzz words such as transponders, uplinks, receive-only earth stations, etc. But while this excitement builds, in the long run, we must remember how the market will perceive the facility. That is, in the cold analysis of the accounting department, will the satellite system be more cost-effective than the present system for education and training. . . .

[Only] when management is convinced that they can train more personnel better and cheaper via satellite-distributed material than by any other method will satellites be used. This educational and training system must support itself on the worker level, and not be installed as an ego trip for senior management.

The economic considerations are not confined to the leasing of satellite time in order to distribute the material; they also are a major factor in the actual design or structure of the course for satellite distribution. Let's look closer at the subject of structuring the program. Much has been written on the importance of structuring the material being transmitted to the medium doing the transmitting. And, as pointed out in the June 15, 1981, issue of

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Television/Radio Age, there is general agreement that a high degree of expertise is needed to pull together the talent to make a first-rate videoconference.

But there may be more to it than that. John Everett, president of the New School for Social Research, stated in a special education supplement to the *New York Times* that interaction between the student and the teacher, and the students themselves, is a very important part of education. He states that the television screen, even when abetted with two-way communications, can only *supplement* classroom teaching.

This suggests to me that prior to setting up a corporate education and training program via satellite, the corporation should give very close thought to the structure of the course. The human factor becomes a very important consideration, and must be taken into consideration so that the student (the employee) will accept the tube in place of the in-room teacher.

This factor—the human factor—was also covered during discussions at Interface 81, when experts pointed out that a major consideration is getting people to accept videoconferencing or video education technology. ARCO stated that a fault has been human needs being placed secondary in communications technology, a thought shared by SBS and Datapoint.

I strongly believe that many prejudices and conceptions of the classroom instructor and the classroom environment will have to be changed before employees will accept a television tube over a living, breathing, in-room expert.

So in order to achieve this desired state of affairs, the corporate training department should be prepared to invest substantial sums of money in the designing of its studio for the production of company-oriented training programs.

In conclusion, let me state that I do believe education and training by satellite is a national resource. No other distribution tool theoretically can reach the entire nation at such a low cost. But at the same time, we must realize that corporations will accept the satellite as an educational distribution method only if it proves economically justifiable. And we must realize that employees will only accept satellite-distributed material if it is part of a professionally prepared and delivered package of learning, composed of video, feedback, and printed support material.

Contributors

Contributors to this issue of TELESCAN are listed below. The efforts of these individuals have been critical to our monitoring activities. ***We urge those of you who wish to become part of this important information network to submit to TELESCAN items of potential interest to our broadly based audience.***

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TELESCAN INDEX

The Digest of the Center for Learning and Telecommunications VOLUME 2 ISSUES 7-12 1982-83

TELESCAN is a valuable reference source for administrators, program developers, researchers, and business managers interested in the applications of telecommunications for adult education and training. This index provides access to the more than 1,000 items contained in back issues of *TELESCAN.* Entries are arranged alphabetically. Each entry is followed by an issue number, in boldface, and page number.

This index covers Volume 2, Issues 7-12, from September 1982 through August 1983. An index to Volume 1, Issues 1-6, from September 1981 through August 1982, is also available. Back issues of *TELESCAN, including the index,* may be ordered for $30 for each volume. Add $1.50 per set postage for orders outside the U.S. Copies of the index only are available for $7.50 each.

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